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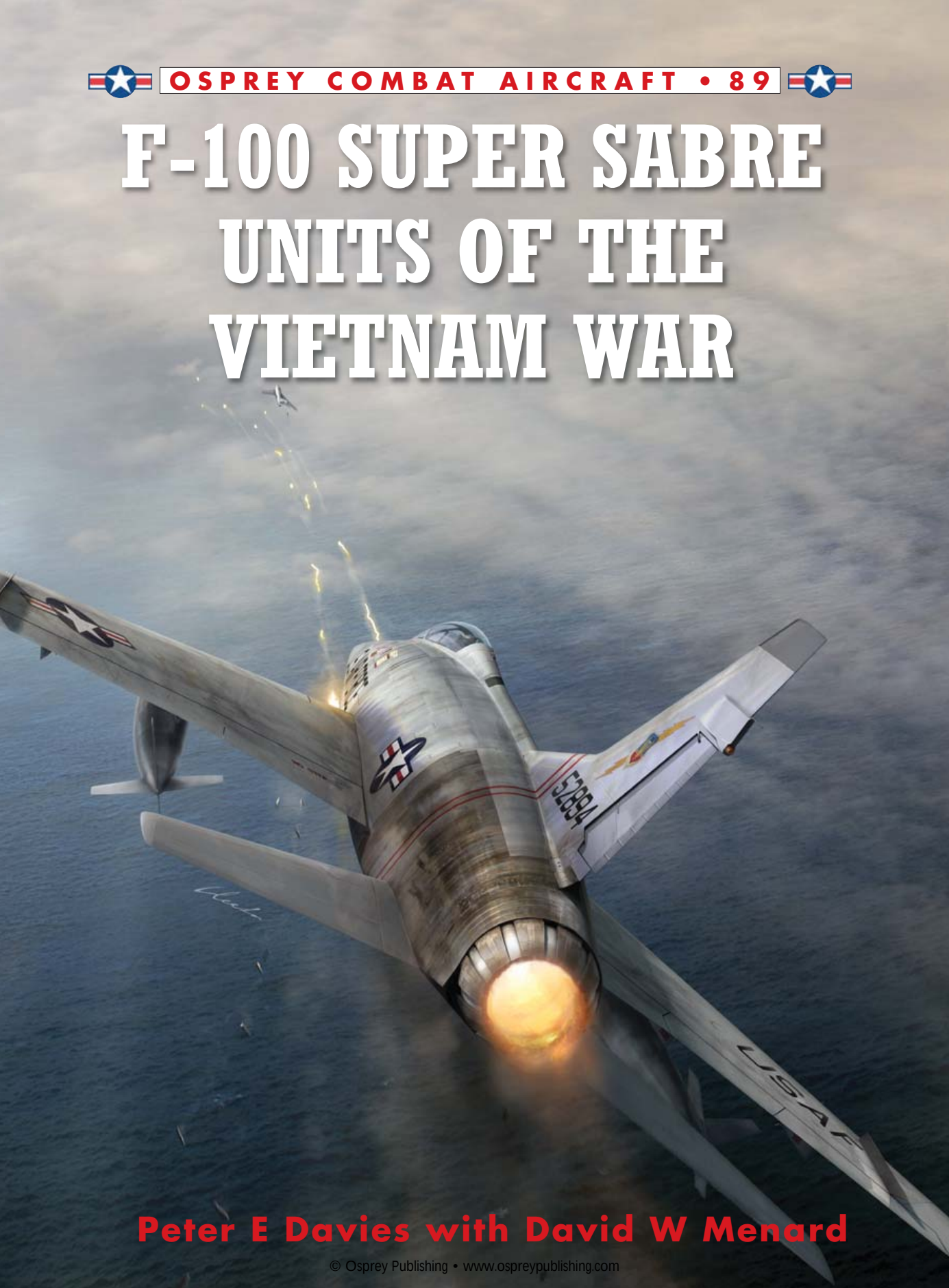
F-100 SUPER SABRE UNITS OF THE VIETNAM WAR



Peter E Davies with David W Menard

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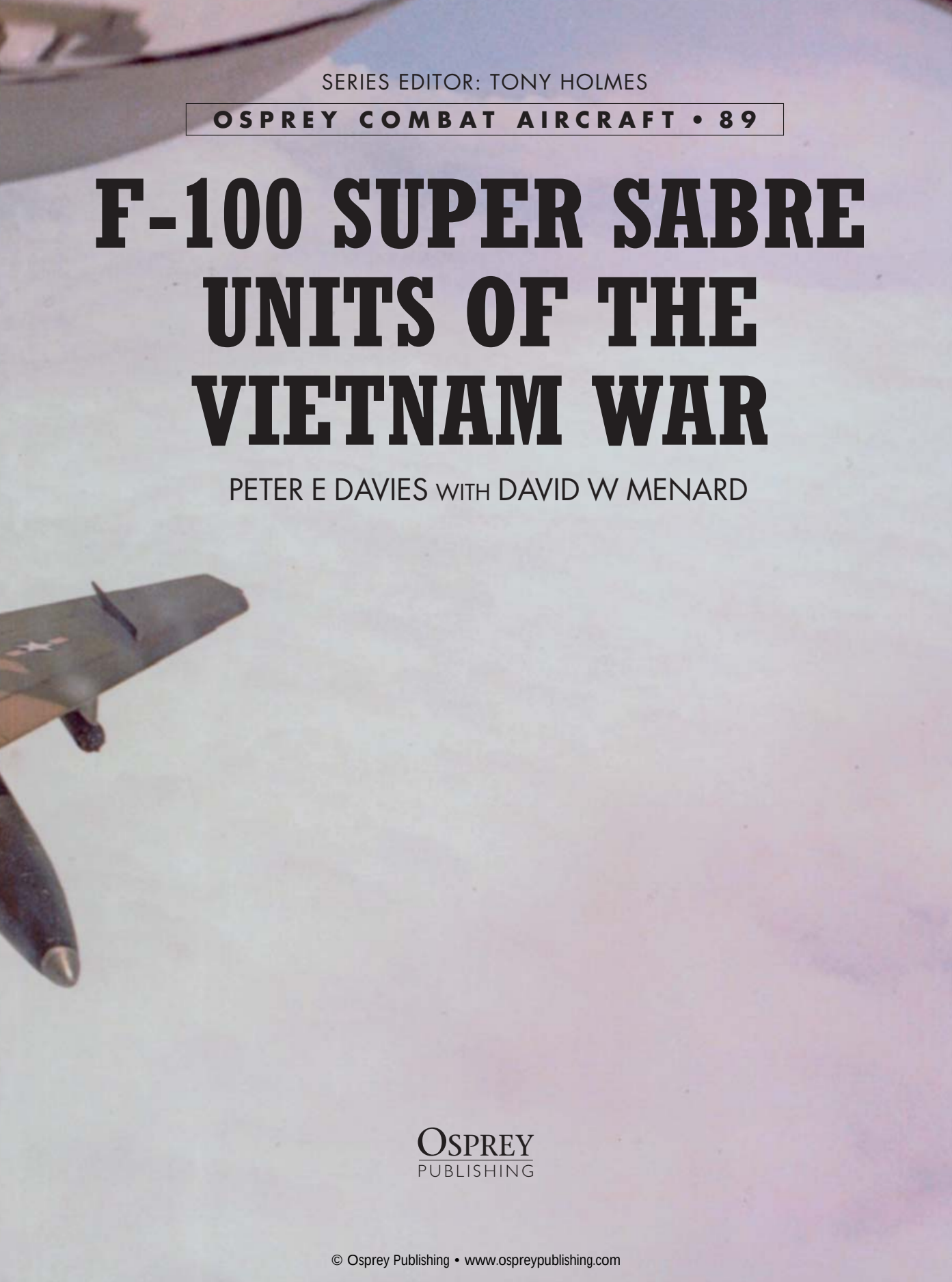

SERIES EDITOR: TONY HOLMES

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PETER E DAVIES WITH DAVID W MENARD

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DEVELOPMENT

The North American Aviation (NAA) F-100 Super Sabre's immediate predecessor, the XP/F-86 Sabre, was ordered in 1945 while the company's most famous product, the P-51 Mustang, was still fighting in World War 2. In the drastic shrinkage that ravaged the aviation industry post-war, the company survived by developing its original, straight-wing, jet-powered XP-86 design into a swept-wing, 618 mph success that first flew on 10 October 1947 and quickly became the USAF's principal fighter. On 26 April 1948 it was the first Western combat aircraft to exceed the speed of sound in a shallow dive. Total production reached 8117 aircraft, and the F-86 served with 26 air forces. During the Korean War its official kill ratio exceeded eight-to-one against the broadly equivalent, and in some respects superior, MiG-15.

More than a year before the F-86 first fought MiGs in late 1950, NAA's Chief Engineer Ray Rice and Head of Design Ed Schmued had already commenced work on its replacement. Their initial goal was sustained supersonic speed in level flight, which required two main innovations – an afterburning engine and a more sharply swept wing. Based on captured German documentation into swept wing designs, the company's Chief Aerodynamicist Ed Horkey had conceived the 35-degree swept wing for the F-86. This was increased to 45 degrees for the new design, known as the NA-180 'Sabre 45'.

The F-86's performance was limited mainly by its early General Electric J47 engine. Its structure required a relatively fat fuselage and its thrust was limited to 5910 lbs. For the NA-180, the much longer, 42 inches wide, two-stage Pratt & Whitney J57 was chosen. This revolutionary powerplant originated in 1948 as the government-funded JT3 for Boeing's XB-52 Stratofortress, and it soon became the first turbojet to exceed 10,000 lbs thrust. The engine used an innovative two-spool, 16-stage axial flow compressor offering higher compression and improved fuel consumption. For supersonic applications, an additional afterburner section increased maximum thrust to 16,000 lbs with a massive, sudden, 'on or off' power boost that could not be graduated as in later engines like the J79 that powered the F-4 Phantom II. More than 21,000 J57s were built for a wide range of jets including the McDonnell F-101 Voodoo, Convair F-102 Delta Dagger and the Boeing 707.

The J57 needed a long intake duct to control the airflow to the engine, and this, combined with the 20 ft afterburner section and additional fuel and equipment, resulted in an airframe that was roughly ten feet longer than the F-86A's and 15,000 lbs heavier when loaded. The F-100A's wings spanned less than 20 inches more than the F-86A's, although they were almost 100 sq ft greater in area.

Gun armament were retained, with the four manually-charged 20 mm M-39 cannons that replaced the Sabre's six Browning 0.50-in machine guns giving the new fighter far greater hitting power. Produced by General Electric's Pontiac Division from 1953, the M-39 fired belt-fed

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Provision of an afterburner that added almost 50 percent extra thrust was one of the F-100's main innovations. This early F-100A-10-NA has the weight-saving short tail and reduced rudder area that caused major stability problems. The fin and rudder were subsequently increased by 27 percent on 70 early F-100As and 108 more that were already on the production line. Wingspan was also increased by 26 inches at that stage. Bearing the serial 53-1529, this aircraft was transferred to the air force of the Republic of China, and it is presently on display at Chiayi air base (*Author's collection*)

M-50-series ammunition. Space and weight restrictions in the F-100 limited each gun to 200 rounds, giving around eight seconds of firing time. Four magazine boxes were situated close to the cockpit, with shell cases being ejected from chutes in the lower fuselage and spent links collected internally. Automatic purge doors opened during gun firing to prevent the build-up of explosive gases within the weapons bay.

Alarmed by the emergence of the very capable MiG-15 in Korea and apprehensive about the next generation of Soviet fighters, the USAF encouraged NAA to push the 'Sabre 45' concept beyond conventional technology as fast as possible. This in turn meant that an order for two YF-100A prototypes placed on 7 December 1951 also funded a number of design and manufacturing innovations.

Huge investment in milling and forging machines, using new metals such as titanium, allowed radically new airframe structures to be built. The main fuselage was assembled from two hollow halves, each stretch-pressed from a single sheet of metal. Wing-skins were tapered from root to tip, and they also had integral stiffeners milled into them for the first time, rather than the traditional structure using spars and wing-ribs. This all meant simpler, lighter structures with fewer components and fasteners. The F-100 (officially named Super Sabre in December 1951) was also cheaper than later 'Century Series' aircraft, although it was the first fighter to cost more than $1 million per copy.

Early F-100s had flapless wings with no internal fuel and powered inboard ailerons to counter the phenomenon of 'control reversal' that occurred when thin wings twisted under the aerodynamic loads placed on outboard ailerons at high speeds. The quest for supersonic flight produced a wing with a thickness/chord ratio of only seven per cent. Automatic Kruger slats were attached to the leading edge to improve low-speed handling and add lift at takeoff. These slats slid down or retracted on roller tracks depending on the aerodynamic loads on the wing to reduce the stalling speed. Checking their movement manually became part of the pilot's pre-flight inspection, as Maj Dick Garrett recalled;

'Those aerodynamically retracted slats had a nasty habit of developing sticky rollers, causing one wing to have extended slats and the other to have the slat retracted. This usually happened at slow airspeeds, when pulling high gs or when flying with a high angle-of-attack, the "Hun" snap rolling in the direction of the retracted slat.'

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Conscious of a tendency for swept-wing jets to pitch up sharply when the tailplane was blanked off at high angles-of-attack, the F-100 designers placed the innovative one-piece, powered slab tailplane as low as possible on the rear fuselage, out of the vortices streaming back from the wing.

The fuselage contained all 750 gallons of internal fuel in five bladder tanks, which were not self-sealing in an effort to save 400 lbs of weight. A large hydraulic 'barn door' speed brake could be extended from below the fuselage at speeds below 500 knots to rapidly decelerate the jet and improve turn rate in combat.

As a daytime, clear weather fighter, the F-100A required no radar apart from a simple gun-laying set, making it one of the last fighters with a single air intake starting at its nose. The intake's thin outer lip was the end result of wind-tunnel tests in the new facility that NAA had acquired in 1949. These tests also prompted the decision to lengthen the fuselage by nine inches and reduce the thickness/chord ratio of the vertical and horizontal tail surfaces to 3.5 percent.

The J57 engine and its afterburner extended for 24 ft inside the fuselage, the latter also accommodating a comparatively spacious cockpit and three hydraulically operated landing gear units. Main gear units had multi-disc brakes and an anti-skid system, while the nose-gear had steering (which doubled as a shimmy damper) and two small wheels to allow the unit to fit below the air intake duct. Weight-saving and drag reduction were major priorities in the search for speed. Even the 60-lb fixed tail bumper was replaced by a lighter, retractable unit. Early test flights revealed that this approach had gone too far in the case of the vertical stabiliser, where, against the advice of designer Ed Schmued, its height had been reduced by more than two feet, thus interfering with the F-100's basic control 'metabolism'. In pilot 'Moose' Moseley's estimation, 'the "Hun" was a rudder aeroplane. The slower you got the more rudder you used, and you stayed away from the ailerons as they were trouble. You didn't slow down, and were careful of the roll mode'.

Driven by the urgent need to stay ahead of rapid Soviet fighter design progress, the USAF sought to accelerate its own procurement process by putting approved designs straight into production before flight testing was completed, rather than waiting in the traditional way for a series of one-off prototypes to refine and evolve the designs up to production standard. Known as the Cook-Craigie policy, it presumed that advanced design techniques and wind-tunnel testing would engender aircraft that could be 'flown off the drawing board'. Flight testing would then serve to prove the design, and any consequent minor modifications could be made during production without big changes to the production jigs and drawings. Applied to the contemporaneous F-102 Delta Dagger, this approach resulted in a fighter that was unable to achieve its intended supersonic performance without major airframe re-design in the light of initial testing *after* production had begun.

Adhering to the Cook-Craigie policy, the USAF ordered 273 F-100As on 26 August 1952 while the first prototype YF-100A was still under construction – 'YF' indicated a 'pre-production' machine rather than an 'XF' experimental prototype. This first aircraft, 52-5754, was completed on 24 April 1953, and flight testing began at Edwards AFB, California. Test pilot, and World War 2 ace, George 'Wheaties' Welch

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went supersonic during the aircraft's first two flights on 25 May, and the first 100 hours of tests revealed no problems apart from the need for hydraulic dampers to cure rudder flutter. Phase II evaluation involved eight USAF pilots, including such legends as Chuck Yeager and Pete Everest, to assess the fighter's suitability for squadron use.

Yeager was among the first to note the YF-100A's lack of longitudinal stability at speed, particularly when carrying external fuel tanks. Everest had reservations about the fighter's high landing speed and slow control and engine response at low speeds – quirks that were to catch pilots out throughout the F-100's career. On 29 October 1953 he used the first prototype to break the world speed record, but keeping the jet stable beyond 767 mph at an altitude below 150 ft proved difficult. Production continued nevertheless, and another 93 examples were ordered despite the fact that five more testing phases were still to be completed.

NAA decided in October 1954 that expanded production of future variants required a second plant. Accordingly, the former Curtiss-Wright factory in Columbus, Ohio, was established as an additional source. However, the eventual production total of 2294 F-100s – less than NAA had hoped for, and only a quarter of the F-86 total – could have been achieved at the company's main Inglewood plant in California.

The first 60 Inglewood-built F-100As were quickly pressed into service with the 479th Fighter (Day) Wing at George AFB, California, from 29 September 1954, wing CO, Lt Col M G Long, flying the first example (53-1541) in. A number of his pilots were Korean War MiG killers, and they immediately began to explore the F-100A's superiority over their previous F-86Fs. Stability problems soon emerged, and NAA's 'tech rep' to the 479th, Jack Bailey, recalled how a pilot showed him 'the numerous paint marks where his helmet had hit the canopy. He was unable to describe exactly what had happened, but it appeared that he had experienced the same kind of inertial coupling which would later claim the life of George Welch and ground the F-100 for the rest of 1954'.

Indeed, on 12 October 1954 the ninth production F-100A (52-5764) disintegrated at 20,000 ft during the last in a series of maximum g/maximum speed dives for the NAA Palmdale Flight Test Center, killing George Welch. Photographic evidence of this accident, as well as a similar incident just two days later, showed that earlier concerns about the F-100A's reduced vertical tail and rudder area were justified since the short vertical surface on Welch's aircraft had failed during an uncontrollable supersonic yaw for which it could not provide adequate directional stability. Operational F-100As were grounded for three months in the wake of this crash, during which time all aircraft were fitted with larger tails at the company's expense.

Although handling was significantly improved, two more F-100As were lost in a 48-hour period due to control problems, bringing the total written off to six, and triggering another prolonged grounding, exacerbated by a three-month strike at the NAA factory. The 479th FDW's initial operational capability was delayed until September 1955, and the last of 122 F-100As was finally delivered at the end of that year.

The aircraft was proving to be such a handful that at least one pilot asked to be relieved from flying duties rather than face the F-100A again. This was a time of experimentation and consequent risk for jet pilots.

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In one nine-month period of 1956-57, Royal Air Force aircrew casualties included one fatality per week on average, most of them in early jet fighters – USAF statistics were even worse.

The USAF was already re-casting the F-100 as a fighter-bomber rather than an interceptor. A similar future awaited most of its fighters as Tactical Air Command (TAC) adopted a nuclear strike role (under Strategic Air Command influence) in the mid-1950s. Fighter pilots would have to wait for the F-15A before a 'pure fighter' re-emerged.

For the follow-on F-100C, intended to replace TAC's nuclear-capable Republic F-84F, NAA added 422 gallons of extra fuel in sealed wing spaces and two extra bolt-on stores pylons to each wing. The crucial range extender, however, was in-flight refuelling through a short, straight probe beneath the right wing. Although this made the F-100 the world's first fighter to possess such a capability, regularly placing the short probe in a tanker's refuelling 'basket' (preceded by an unstable aluminium funnel) was not easy, as Col Tom Germscheid recalled;

'It was virtually impossible to see the end of the probe from your normal cockpit position. You had to guess where it was and hit the basket with pretty good acceleration so as to engage the latch. You would look for the hose to "snake" when you hit the basket. If you didn't see it snake as you advanced the last ten feet then you had almost certainly missed the drogue, and the basket was probably beating up your wing slats or fuselage sides. Later, they put a bend in the extended probe, raising the tip up about three feet. You could then see it from the cockpit out of your peripheral vision, and this made refuelling a piece of cake.'

USAF tankers at that stage were piston-engined KB-50 Superfortresses, whose top speed approximated to the F-100C's 250-knot stalling speed, or the even slower KC-97 Stratofreighter. Refuelling required tanker and fighter to descend in a 'toboggan' manoeuvre so as to sufficiently reduce the F-100's angle-of-attack. The 'basket' had an inertia reel system that was supposed to retract the hose slightly when then F-100 made contact. Sometimes this did not work, and a 'whiplash' wave motion over-flexed the short refuelling boom, snapping it off. Unexpected turbulence could do the same to the longer, curved boom, which could also be left badly bent out of shape. Things had improved by the time Jerry Key joined the 522nd TFS at Cannon AFB, New Mexico, in 1967;

'When I got into the "Hun" all the hard work was already done, and I always thought refuelling was a real hoot. I liked doing it as it took more skill than in the later A-7D, where the pilot simply had to fly formation aft of the tanker and let the boom operator do the work.'

The F-100C had the more powerful J57-P-21 engine, making it the fastest Super Sabre of them all.

The F-100C's two extra pylons gave the Super Sabre strike capability. A centreline stores position was also available, wired for a nuclear store but more often used for an SUU-21 dispenser with BDU-33 or Mk 106 practice bombs or a tow-dart target rig. In combat, the centreline station occasionally held a camera pod, but it was never used for weapons carriage during the war (*Rockwell International*)

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It also had better yaw and pitch damping, as well as the M-1 bombing system to deliver a 5500-lb maximum bomb-load. Many pilots converting to the F-100C from the F-84F were delighted that it required around half the take-off run of their previous steed. A new avionics package included TACAN, a radio compass, ILS and an AN/APG-30A radar ranging set for the A-4 gunsight. Subsequent additions included the MA-2 low altitude bombing system (LABS), an MB-3 autopilot (rated as 'notoriously terrible' by pilot Alex Martin) and clearance for stores including cluster bomb units, MK series bombs and (for Air National Guard F-100Cs only) the AIM-9 Sidewinder.

A typical training load for the formerly 'clean' day fighter at this time would see it in '1-E3' configuration – 250-gal tanks on the left outboard and right inboard pylons and a 275-gal 'banana' tank on the right intermediate pylon balancing out a universal weapons pylon (nuclear) on the left intermediate. The remaining right outboard pylon often carried practice bombs. All external tanks had to be empty for a safe landing with this asymmetric load. Vietnam War F-100C/Ds usually carried Mk III 'stretched' 335-gal or big 450-gal 'bags' when deploying.

By January 1957 476 F-100Cs had been produced, a number of which gave more than 30 years of service flying with US and foreign air forces.

The F-100D became the main variant, with a peak number of 70 airframes per month emerging from the two NAA factories in 1957 for a total of 1274 aircraft. First flown on 24 January 1956, the D-model had another four-inch height extension to the vertical stabiliser and an AN/APS-54 tail warning radar antenna housed above the rudder. It was 1200 lbs heavier than the F-100C, and in later D-models this weight difference was to increase still further, making inboard trailing edge wing flaps a vital addition for safe landings. These kept touchdown speeds to around 150 knots. F-100Ds also had a new centreline hard point to take a Mk 28 nuclear store (requiring modifications to the air-brake for adequate clearance of this projection) and an improved zero altitude/minimum airspeed ejection seat.

The unprecedented expense involved in building Century Series fighters meant that the creation of two-seat trainer versions of these aircraft were low on the US government's list of priorities. However, towards the end of the Super Sabre's production cycle a two-seat version, designated the F-100F, was finally ordered.

During the F-100's first 100,000 flight hours, 95 major accidents and six fatalities gave it the worst safety record to date for an American supersonic fighter. These worrying statistics would soon be surpassed by the Lockheed F-104 Starfighter, however, crashes of which resulted in the deaths of 18 pilots in the early years of the programme.

The initial cadre of Super Sabre pilots had to transition straight onto the fighter from other more docile types. Following a series of accidents, NAA proposed a two-seat 'TF-100C' in May 1954, and a modified C-model (54-1966) with an F-100D vertical stabiliser and a second cockpit in a three-foot forward fuselage extension went supersonic on its first flight on 3 August 1956. It was followed in March 1957 by the first true F-100F, which featured D-model wings, only two guns and a weight increase of about 1000 lbs. Although the training attrition rate was not significantly reduced following the service introduction of the

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The F-100F had similar front and side instrument panels and controls to the F-100D in both cockpits, apart from the A-4 gunsight and associated equipment for the AN/ASG-17 fire-control radar subsystem in the rear 'office'. Its ordnance load was limited to 5000 lbs, which was 2000 lbs less than the F-100D's. The two-seater normally used a wider variant of the F-100D boarding ladder. The flimsy nuclear radiation shield can be seen in the folded position in the rear cockpit of this 354th TFW example (56-3952) at Myrtle Beach AFB, South Carolina, at a time when training concentrated on nuclear alert. This F-100F-16-NA was transferred to the Turkish Air Force in 1969 and crashed on 22 March 1973 (*354th TFW via Norman Taylor*)

F-100F, it nevertheless became one of the most useful and versatile variants of them all. Don Schmenk, who instructed from the back seat of the F-100F, found the jet 'a little more challenging than the T-33 to land from the rear seat since forward visibility was more restricted, although I don't recall having any problems'.

Converting pilots from other USAF backgrounds onto the F-100 during the Vietnam War sometimes required a return to basics. 'Most of the former multi-engined aircraft guys (B-47 co-pilots etc.) hadn't landed an aeroplane for so long that they initially flew a T-33 for landing currency', Schmenk explained. 'Some turned out to be excellent F-100 pilots, while others had their share of minor problems'.

More records were broken as Super Sabres entered frontline service. Col Howard Hanes averaged 822.135 mph over a 15-25 km course in an F-100C on 20 August 1955. Another F-100C flown by Col Carlos Talbott won the Bendix Trophy with a 2325-mile flight at an average 610.7 mph. This demonstrated the long-distance deployment potential that was to be the F-100's forte in the next two decades.

A Composite Air Strike Force initiative enabled F-100s from several TAC groups to transfer rapidly to destinations in Morocco, Germany and, in 1958, to Incirlik AB, in Turkey, to provide a US presence while insurrections in Iraq and the Lebanon occurred. The first composite force – *Mobile Zebra* – to visit the Far East consisted of 32 Super Sabres and a handful of Douglas B-66 Destroyer bombers and McDonnell RF-101C Voodoo tactical reconnaissance aircraft in a transpacific flight from Cannon AFB to Clark AB, in the Philippines, in November 1957.

By the early 1960s pilots like Maj Alex Martin could expect to be on TDY (temporary duty) for up to 270 days a year, ready 'in nuclear-armed jets to launch against studied, pre-planned targets within 15 minutes'. Their presence became crucial in February 1965 when US government advisors estimated that there might be a massive Chinese incursion into many areas of Southeast Asia as a reaction to planned American air strikes on North Vietnam.

Other 'Victor Alert' pilots from designated units in five Europe-based wings also prepared for this terrifying one-way mission carrying a 1600-lb Mk 7 'special' (nuclear) store on the left middle wing pylon. Their training focused on LABS (low angle bombing system) delivery, which saw them 'toss' the bomb from a low altitude half-loop or 'idiot circle'. An SUU-21 dispenser was usually carried on the centreline pylon, loaded with a pair of BDU-33 and Mk 106 practice bombs for this purpose.

Non-Single Integrated Operational Plan squadrons concentrated instead on conventional weapons tactics. For example, they would fly gunnery patterns from Wheelus AB, in Libya, with four F-100s arranged

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at equidistant points on the four 'corners' of a rectangular 'box' orbit, turning inwards individually to strafe a ground target. A firing pass usually began at around 3500 ft in a 15-degree dive, ceasing fire at 1500 ft after all 100 rounds had been fired out. Variations on this, using a 'wheel' formation tactic with aircraft making carefully timed attacks on reciprocal bearings from opposite sides of a circular orbit, were employed by the first F-100 units to deploy to South Vietnam in 1965.

Skip bombing practice required final attack runs at 50-100 ft and at speeds in excess of 400 knots against a large canvas target panel, often followed by a dive-bombing session against a 300-ft circular target, dropping practice bombs at around 400 knots in a 30-degree dive. Most of these skills, apart from the most-practised LABS delivery, were later adapted for use in Vietnam, where many former USAFE Super Sabre pilots served. The 'nuclear option' was, however, briefly considered by the Joint Chiefs of Staff as a last-ditch measure for the relief of the besieged US Marine Corps base at Khe Sanh in February 1968.

In USAFE, the worst enemy for pilots flying this fast, unforgiving jet was the northern European weather. They quickly learned to fly close formation in visibility that was often so bad that they did not break out of cloud and mist for the entire mission. This too was to be valuable experience for similar conditions over parts of Southeast Asia.

Generally absent from the training syllabus was any form of dissimilar air combat training. Air-to-air gunnery involved firing 100 rounds at a dart-shaped target towed by another F-100. The fourth pilot in each 'attacking' flight would try to shoot the target off its wire so that the tow pilot did not have to drag it back to base for the scores, indicated by bullet holes with a different marker colour for each F-100 pilot's ammunition, to be added up. That way they all qualified for a successful sortie even if some pilots missed the target!

Pilots who found unofficial opportunities to test their dogfighting skills against other types of fighters could face severe disciplinary action. In any case, an F-100D with external ordnance lacked the agility to deal with more nimble fighters. In combat, fuel tanks could be jettisoned, but this clearly was not feasible for peacetime training. Luckily, some F-100C pilots in early units like the 36th FDW in West Germany still maintained a non-nuclear air superiority role, and they gained regular experience of air-to-air manoeuvring against agile aircraft like the F-86. This allowed the wing to keep these crucial dogfighting skills alive, and they would prove vitally important during the Vietnam War when the F-100 came up against aircraft with similar performance characteristics to the Sabre in the form of Soviet- and Chinese-built MiG-17Fs.

Initially, much was made of the F-100's AIM-9B Sidewinder capability in air-to-air fighting. At George AFB in 1959 'Moose' Moseley found that 'Sidewinders were new and had seen little use. I had one live firing to qualify. I tossed a five-inch HVAR (High-Velocity Aerial Rocket) with tail flares out yonder at 30 degrees nose up and fired the "snake" as the target rocket neared the horizon. I scored a kill. Nevertheless, nobody on base wanted to go and fight someone with them'.

The F-100 accident rate in training remained high into the early 1960s, with more than 25 per cent of the production run eventually being written off in crashes. Improvements came through revisions to the

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A line-up of silver-finished F-100Ds at England AFB in 1965. A year later, F-100D-31-NA 55-3774 was transferred to Phan Rang AB to serve with the 35th TFW, the jet having been camouflaged in the TO-1-1-4 paint that cut top speed by about 20 mph and made the aircraft harder for FACs to keep in sight during an attack pass. The aircraft crashed on 22 December 1966 whilst in 615th TFS service (*USAF*)

pilot's handbook and far better standardisation procedures such as those initiated by Capt George 'Bud' Day when he was assigned to the 20th TFW in USAFE shortly after it converted to the F-100. Col Robert Wendrock, who flew 289 combat missions in the jet, described it as 'a fighter pilot's aeroplane that separated the ham-fisted from the really good "sticks". It was fairly easy to fly, but could "bite you in the rear" in a heartbeat if you did not respect it. The jet constantly "talked" to you, letting you know by feel when it was getting close to becoming scary. The really high-time F-100 guys could make it do things that would amaze most of us. It was very safe as long as you respected it'.

The worst predicament pilots might face arose from the jet's sensitivity to the controls at low speeds. Mishandling could easily provoke the infamous 'Sabre dance', a virtually unrecoverable adverse yaw situation. Over-rotation on take-off or inadequate power on approach could cause a drastic increase in the angle-of-attack as the 'Hun' oscillated from side to side and then stalled. Application of full power could not save the situation, and even the most experienced pilots could be caught out. 'The adverse yaw issues had to be respected, and some guys learned to use it to their advantage', explained Bob Wendrock. 'All swept-wing aircraft can do a "Sabre dance", but the F-100 was well known for it if you got too slow. A characteristic of slow-speed pull-out is a rotation of the nose, but no change in the downward flight vector, at least for a while'. At low altitude there was no room and insufficient power for recovery.

Col George 'Raven' Laven leads his flight out of Clark AB to Da Nang for the F-100's first ever combat mission on 9 June 1964. The bulky 450-gallon tanks on his brightly decorated personal aircraft and the others in his flight were a handicap on the difficult mission that followed (*L Holcomb via David Menard*)

At Kadena AB, Okinawa, the 18th TFW converted to the F-100 in 1957, preceded by the 8th FBG at Itazuke AB, Japan, in 1956. Both wings stood nuclear alert duties while tension between Taiwan and communist China persisted. The 21st TFW was based at Misawa AB, Japan, from 1958 to 1960, and its 531st TFS was the SIOP unit at this often cold and snowy base, while the 416th TFS handled 'conventional' fighter-bomber duties. Clark AB in the Philippines had a weapons range that was used to keep pilots combat ready, while the base itself acted

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as a forward location for deployments in Southeast Asia. It was also home to the 405th FW's F-100D unit, the 510th TFS, from 1959.

The first F-100 deployment to Thailand, codenamed Operation *Bell Tone*, was made on 16 April 1961 by six 510th TFS jets in response to the downing of a 315th Air Division (AD) SC-47B by Pathet Lao forces on 23 March. The aircraft was monitoring radio transmissions from airstrips in Laos, and seven US airmen were killed and one captured in this first combat aircraft loss in the area since World War 2.

The F-100Ds provided air defence alert at Don Muang Airport in Bangkok. An F-100F flight led by 80th FBS pilot Roy Moore also visited Don Muang during this period and gave check-rides to Thai military personnel, 'including the top general in the army and even the king's concubine, the first female pilot in Thailand'. Moore was told to fly back to Clark AB 'without flight refuelling on a route that went directly across North Vietnam. I never knew whether this was an intelligence gathering flight, but I suspect there was a "spook" sitting off-shore recording all the radar activity as we crossed'.

Temporary *Saw Buck* deployments to Takhli Royal Thai Air Force Base (RTAFB) from Cannon and England AFBs began in May 1962, starting with the 428th FBS/474th FBW from Cannon, followed by the same wing's 430th FBS from September to December 1962. The 522th TFS assumed the Takhli posting under *Saw Buck III* for six months from December 1962, returning for three months in March 1964. Increasing Southeast Asian involvement required the 401st TFW to deploy its 615th TFS to Da Nang, in South Vietnam, for a month in August 1964, followed by the 612th TFS. The 428th TFS was TDY to Da Nang for the rest of 1964 using the assets of the 522nd TFS. One of the *Saw Buck* TDYs took the 615th TFS from England AFB, Louisiana, to Clark AB on 3 June 1964. Ron Bigoness recalled;

'Our 615th TFS rotational deployment to the Philippines in 1964 started out normally but quickly became chaotic when a US Navy pilot was shot down in Laos. We quickly ended up with our aeroplanes and people in three places – the Philippines, Tainan and Da Nang. We had to cover our "nuke" targets from the Philippines and Tainan and still fly a few sorties from Da Nang'.

F-100D-90-NA 56-3264 was photographed at Clark AB in December 1961 bearing the colours of the 510th TFS/405th FW. The unique purple tail marking was retained as a fin-cap colour when the squadron's aircraft were camouflaged. The bulky 450-gallon drop tanks seen here were carried on jettisonable pylons, while the 275-gallon and 335-gallon types (almost the standard tank for the Vietnam period) were made with integral pylons that were released with the tanks. This F-100D remained in 510th TFS service when the unit moved to Bien Hoa AB, and it was shot down on 22 August 1967 while attacking a VC troop concentration. Capt H D Canterbury was recovered (*David Menard Collection*)

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Yankee Team reconnaissance flights by RF-8A Crusaders of VFP-63 had commenced the previous month in support of Royal Laotian Air Force operations, and Lt Charles Klusmann's RF-8A had been damaged by AAA on 21 May. He was hit again on 6 June and hydraulic failure forced him to eject. Klusmann's Crusader was the first US Navy loss in Southeast Asia, as well as the first combat jet casualty of the war. In response to this loss, eight 615th TFS F-100Ds, led by the Clark AB wing commander Col George 'Raven' Laven, were sent to Da Nang AB on 7 June to fly the Super Sabre's first combat mission, out of more than 250,000 sorties flown by the end of the Vietnam War, two days later. The jets had to deploy with their own 2.75-in rocket pods as none were available at Da Nang, but they were damaged by heavy rain en route.

After receiving many contradictory instructions regarding ordnance for the mission, armourers from the 615th TFS finally loaded either rocket pods or four 500-lb bombs to the wing pylons of each F-100D for the mission, and four KC-135A tankers were deployed from Guam to support them. The target was one of the AAA sites that had downed both Klusmann's RF-8A and a VF-111 F-8D the very next day. The target area was in poorly mapped terrain on the Plain of Jars, beyond US radar coverage and navigation aids. One of the KC-135A navigators helped the two F-100D flights locate the target coordinates, but the fighter crews had no photographic target identification, having to rely instead on a description of a small fortress structure that housed the AAA battery.

The second F-100D flight became separated from Col Laven's leading flight and mistakenly bombed another AAA site 25 miles from the assigned target. Col Laven's flight caused some damage to the original target but a shortage of fuel forced them to divert to Udorn RTAFB, thus ignoring specific instructions to avoid flying over Thailand. Col Laven's jet burst a tyre on landing (which he attributed to a faulty anti-skid system) and did so again on their eventual, nocturnal, return to Da Nang, when it also cut through the cabling for the airfield's temporary landing lights, requiring his wingman, Capt Jerry Dixon, to land in total darkness. Col Laven, who described the mission as 'one of the worst I have ever flown', was relieved of his command shortly afterwards, having been christened 'the guy who bombed the wrong target'.

According to Capt Lloyd Houchin, who was in Laven's flight, 'The first F-100 combat mission was a disaster – what we used to call a "group grope"'. Although a few of the pilots involved had combat experience, none had previous exposure to the severe problems of operating over the unfamiliar territory of Vietnam and Laos. The rest of the 615th TFS TDY placed varying demands on the pilots, as Ron Bigoness explained;

'I flew one four-ship escort for an RF-101C conducting a recce mission, and also escorted ELINT C-130s flying off the coast of North Vietnam almost all the way up to Hainan Island. We had to refuel in flight for those missions, and I think we had one AIM-9 Sidewinder under each wing. We also flew a MiGCAP mission for South Vietnamese A-1 Skyraiders attacking targets in the southern part of North Vietnam. We were actually fragged against Phuc Yen airfield in North Vietnam one day, but before we had even started to plan the mission it was cancelled. I never saw a MiG-17, let alone engaged one! Each day was a surprise, as we never knew what was coming down from Saigon.'

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The 510th TFS had a little more in-theatre experience from their earlier TDYs at Don Muang, and the unit was re-deployed from Takhli to Tan Son Nhut AB, in South Vietnam, in June 1964 to escort *Yankee Team* RF-101C Voodoo photo-reconnaissance activity. Moved yet again to Da Nang in mid-June, the squadron continued to fly escort missions, but it was also put on alert by Maj Gen Joseph Moore, CO of the 2nd AD at Tan Son Nhut. This meant that two jets were kept ready on the 15-minute 'hot pad' and another four on one-hour alert to respond to any further attempts to down US reconnaissance aircraft. A similar alert facility was established at Takhli in mid-1964 to provide cover for rescue attempts of downed aircrew as part of a Composite Air Strike Force.

It was on one of these missions that the first shoot-down of an F-100 occurred after more than two years of operational use in Southeast Asia. Pathet Lao forces downed a Royal Laotian Air Force T-28D Trojan on 18 August and then caught an Air America (CIA) UH-34 helicopter in a flak trap as it tried to recover the pilot. A flight of 474th FBW F-100Ds was scrambled from Takhli to the Plain of Jars crash site, where they strafed the Pathet Lao gun positions with 20mm cannon fire. 1Lt Arnie Clark's Super Sabre (56-3085) was hit and began to lose hydraulic pressure. He managed to coax the fighter across the Thai border, where he ejected into the suburbs of Nong Khai and was picked up by another Air America helicopter. Clark later became a *Misty* FAC (Forward Air Controller) pilot and had to eject for a second time on 22 January 1969 when his F-100F (56-3886) was hit near Chu Lai. Returning for a third tour of duty in 1972, he flew a record nine-hour RESCAP mission in an A-7D Corsair II 'Sandy' jet for which he was awarded an Air Force Cross.

Escort for Laotian T-28s became a regular duty for F-100 units from 14 October 1964. An epic rescue effort – one of the first of many in the Vietnam War – was organised for Capt William Martin, pilot of the second F-100D to be lost to Laotian insurgents' gunfire. The 613th TFS took over a 401st TFS rotation duty at Da Nang AB in September 1964 flying *Yankee Team* escort, often with pairs of F-100Ds. On 18 November Capt Martin lost a duel with a Pathet Lao flak emplacement and his aircraft crashed near the North Vietnamese border. A force of eight F-100s, thirteen F-105D Thunderchiefs and six US Navy A-1 Skyraiders, with support from an Air America C-123, four helicopters and an HU-16 Albatross airborne controller, mounted a two-day search and rescue (SAR) effort. However, when the co-pilot from one of the helicopters was lowered down to the crash site, he discovered that Capt Martin had been killed when he hit rocks upon landing in his parachute.

In November and early December 1964, F-100s targeted enemy lines of communication in northern Laos in response to continued Viet Cong (VC) attacks on US bases. 'Pathfinder' RF-101Cs were often used to lead F-100Ds to the targets, after which they would follow up with post-strike photographic passes to provide bomb damage assessment (BDA). This tactic was also used for the first F-100 attacks on North Vietnam.

These early deployments provided basic combat experience for numerous F-100 units, many of which returned to the conflict later in the war. They showed that the jet could be an effective ground-attack weapon, but they also revealed the ever-present threat of AAA and the hostility of the terrain over which these missions were being flown.

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WARHORSE

A limited campaign of bombing in Laos, codenamed *Barrel Roll*, began on 14 December 1964, and the first mission was flown by 6234th TFW F-105Ds from Korat RTAFB, with eight Da Nang-based 401st TFW F-100Ds providing CAP. The F-105s were unable to hit their target (a small underwater bridge), but on a similar mission on 13 January 1965 they destroyed the Ban Ken bridge with 750-lb bombs and Bullpup missiles. Eight Da Nang-based F-100Ds with CBU-2 cluster bombs were tasked with suppressing 30+ AAA sites near the target. They persisted in their attacks after the main target had been wrecked, and on its fifth pass over the guns Capt Charles L Ferguson's F-100D, leading the 613th TFS component, took a lethal hit while providing cover for the rescue of downed F-105 pilot Capt Al Vollmer.

Once again, an Air America helicopter retrieved the 'Hun' pilot after he had spent an anxious night hiding in the jungle, but the motto 'one pass, haul ass' (rather than making multiple passes at a defended target) began to appear in briefings, although FACs usually required several passes at each target.

Flak suppression and rescue cover was the principal task for the 20 Da Nang-based F-100Ds, led by an RF-101C pathfinder, that took part in the *Flaming Dart 1* raid on the Chap Le barracks, ordered on 8 February 1965 in response to VC attacks on US Army facilities at Pleiku. Although the raid was led by Air Vice-Marshal Nguyen Cao Ky of the Vietnamese Air Force (VNAF) and his 26 A-1H Skyraiders, this was the first USAF strike on North Vietnamese targets, and the aircraft dropped more than 30,000 lbs of ordnance on AAA sites. Capt Ron Bigoness flew the mission as a flak suppressor;

'We carried 750-lb bombs and met the A-1s over the target, which was a military barracks complex. Since this was the VNAF's first venture into North Vietnam, they didn't want it to be a dismal failure, and they figured that if the USAF had a hand in flak suppression they would have a better chance of a successful mission. They didn't lose any aeroplanes, but one guy reported a bullet hole in his wing, though I have some doubt about that. To bolster the aircrews' morale Vice-Marshal Ky came up to Da Nang to talk to us.'

F-100s performed this function against the same target for *Flaming Dart II* on 11 February, again supporting VNAF A-1Hs. Two jets sustained flak damage.

Destroying AAA sites, or merely distracting gunners from the strike aircraft, gave F-100 pilots one of their hardest tasks. Generally, the

Right
Capt Ron Green's 416th TFS F-100D-31-NA 55-3797 at Bien Hoa in July 1965, with mission markings already covering the nose and only a small green tail stripe to indicate its unit assignment. The extraordinarily heavy mission load for the Super Sabre wings meant that pilots sometimes achieved very high personal combat mission totals. Jack Doub held the record with 572 (*SSgt David Menard*)

Protected only by basic cement-coated sandbag revetments, these 401st TFW F-100Ds await their next missions from a crowded Da Nang in 1965. 55-3572 of the 615th TFS has an unusual lightning flash marking on its fin tip and a cobra painted on the nose (both sides), while 55-3809 has a 90th TFS 'zap' at the base of its rudder (*L Holcomb via David Menard*)

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heavier calibre artillery (57 mm and 85 mm) was used to defend the most lucrative targets. Some pilots favoured deliberately goading AAA batteries into firing so that they could be attacked. Others preferred to respond only when a gun presented a real threat.

The effectiveness of North Vietnamese flak was soon felt. Maj Robert Ronca died on 19 February when his 613th TFS F-100D (55-3783) was hit while re-attacking AAA positions near the Ban Ken bridge, and two more Super Sabres were among five fighters downed on the first mission of the *Rolling Thunder* campaign on 2 March 1965. Forty F-100s from Takhli and Da Nang had provided flak suppression, CAP and RESCAP for 44 F-105Ds and 20 B-57 Canberras on this first all-USAF major strike. The second *Rolling Thunder* package on 14 March was a VNAF strike on Tiger Island, off the North Vietnamese coast, and this was supported by F-100D and F-105D flak suppressors and MiGCAPs.

Both F-100Ds lost on 2 March were flak suppressors making second passes at AAA positions. Lt J A Cullen from the 428th TFS, based at Takhli, was recovered after ejecting (from 56-3150) off-shore, but 1Lt Hayden Lockhart of the 613th TFS (in 55-2857) became the first USAF flyer to be made a prisoner-of-war (PoW) by the North Vietnamese after he was finally captured following seven days of evasion.

F-100D-56-NH 55-2946, with 844-lb CBU-28/A dispensers attached to each outer wing pylon, bears the yellow fin flash of the 615th TFS/ 401st TFW at Da Nang in May 1965. This was one of several Super Sabres that had spent its first years with the 50th TFW in France and Germany prior to moving to the 401st TFW in January 1962. After several years at Clark AB, during which time it participated in TDYs to Da Nang, the aircraft returned to Europe with the 613th TFS/401st TFW (*SSgt David Menard*)

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At the start of *Rolling Thunder*, which saw an increasing number of attacks made against targets in North Vietnam, the USAF had 200 tactical fighters in South Vietnam and 83 in Thailand, but it could draw on PACAF F-100s from Kunsan AB, South Korea, or Misawa. Large-scale strikes against fairly small targets reflected concerns in Washington, DC over the increasing accuracy and numbers of North Vietnamese anti-aircraft weapons, and the need to make each carefully-selected strike as damaging as possible. The extensive use of F-100s with 2.75-in rocket packs and CBU-2s as the primary anti-flak aircraft continued, and their losses on these hazardous missions were comparatively low.

As part of their support for the main F-105D strike force on *Rolling Thunder* missions, F-100 pilots also flew weather reconnaissance ahead of the Thunderchiefs. Capt Ron Bigoness was performing just such an early morning weather 'recce' on 31 March 1965 when his 615th TFS F-100D 55-2906 was hit in the rear fuselage as he descended to 1500 ft below cloud. Advised to get out of his blazing 'Hun' by wingman Capt Lawrence 'Dutch' Holland, he managed to climb to 13,000 ft;

'The right wing was on fire and there were small explosions in the aft section, but that J57 just kept on churning. As we topped out the airspeed fell off and the nose dropped below the horizon as the jet tried to maintain the "trimmed for" airspeed of 400 knots. About then, with frozen controls and throttle, I was just a passenger riding a roller coaster.'

When the 'Hun' began to roll inverted Bigoness had to eject, and he was fortunate to be recovered intact from the Laotian jungle by a Nakhon Phanom-based HH-43B (piloted by Jay Strayer), albeit with a fractured arm and dislocated shoulder. It was the first successful combat search and recovery operation for an F-100 pilot. Capt Holland (in 55-3702) was shot down during a 12 June 1965 CAS mission and apparently lost a small-arms shoot-out with the VC. Ron Bigoness eventually volunteered for a second F-100 tour in 1968, flying a further 220 missions with the 352nd TFS from Phan Rang. 'They were getting critically short of experienced flight leaders at that stage', he recalled. By then 'all the missions were CAS "in-country" using 750-lb and high drag bombs, napalm, some CBUs – the first time I had used it – and guns'.

The F-100D operated in four roles during the first assaults on the Ham Rong ('Dragon's Jaw') bridge, 70 miles from Hanoi, on 3 April 1965. Two flew weather 'recce', seven provided flak suppression, eight supported the RESCAP flights and four more flew MiGCAP. Although North Vietnam's first MiG-17s had arrived at Noi Bai airbase on 6 August 1964, no aerial combat took place until this first Ham Rong bridge mission, when 921st FR fighters engaged US Navy F-8s. However, they avoided the Super Sabres covering the USAF strikers, and the only F-100 lost was 1Lt George Smith's AAA suppressor (55-3625), hit on its second pass. The jet, was too low for Smith to eject.

Maj Gen Moore warned the Johnson Administration that the MiG bases should be destroyed before they could disrupt US air activity over North Vietnam, and the 615th TFS came close to fulfilling that requirement. 'We were actually "fragged" against Phuc Yen airfield in North Vietnam one day, but before we even started to plan the mission it was cancelled', Ron Bigoness explained. Adm Ulysses S Grant Sharp, commander-in-chief of US Pacific Command, also wanted formations

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of 12 F-100s, with F-105s and B-57s, to 'seed' the Mu Gia Pass with delayed action ordnance to deter troop movements from North Vietnam. President Johnson refused this proposal too.

Four 416th TFS pilots had provided RESCAP cover for Lt Col Robinson Risner, who organised the Ham Rong missions, when his Thunderchief was shot down near the Vinh Son radar site on 22 March. Capt Ron Green, flying as No 4 in the RESCAP, recalled that this mission was launched with such urgency that he did not have time to collect his personal survival kit or pre-flight his aircraft. As last man off the runway, he accelerated after the rest of the flight. 'I then checked my airspeed, and to my surprise saw I was going through 500 knots! As we had a 395 knots speed limit with "335s" (drop tanks) and fuel, I brought it out of burner and called the flight. They immediately came out of burner too, and I was able to join up with them when we were about 40 miles north of Da Nang'. Risner was recovered by a Grumman SA-16 amphibian, and the RESCAP F-100Ds had time to complete three circuits above the aircraft as it struggled to get airborne from a choppy sea with a failing engine.

Gen John McConnell, Chief of Staff, USAF ordered a re-strike on the 'Dragon's Jaw' on 4 April, although this mission omitted an F-100 flak suppression flight following the loss of George Smith. The Super Sabre units provided two weather reconnaissance 'scouts', while the 416th TFS fulfilled both RESCAP and MiGCAP roles with a total of 16 F-100Ds. It was their experience that day which resulted in the fighter's only (probable) MiG kill of the war and, paradoxically, its withdrawal from the MiGCAP role over North Vietnam. Having engaged US Navy fighters with some success on 3 April, the VPAF's 921st FR was emboldened into engaging the 'Dragon's Jaw' F-105 strike package.

The RESCAP F-100D flight ('Green' flight), carrying 2.75-in rocket pods, set up an offshore orbit, ready to move in and cover for the SAR forces if required. Although the MiG pilots seldom ventured across the coast because of US Navy Barrier CAP (BARCAP) fighter patrols, their radar controllers vectored two of them behind 'Green' flight from a head-on approach. The 416th TFS jets turned to meet them, and Capt Don Kilgus ('Green 2') pursued a MiG-17 in a steep dive from 20,000 ft down to 7000 ft, firing several bursts from his 20 mm cannons and observing hits on the fighter's right stabilator. He and other flight members saw pieces fly off the MiG, but at the last moment Kilgus had to pull out of his dive, whereupon he lost sight of the target in the hazy conditions above the Gulf of Tonkin.

The MiGCAP ('Purple') flight, led by 416th TFS CO Lt Col Emmett Hays, established their BARCAP circuit 60 miles further north, blocking the presumed ingress route of MiGs for Noi Bai. Capt Keith Connolly ('Purple 2') detected four MiG-17s approaching the 354th TFS's 'Zinc' flight of F-105Ds from low altitude through cloud and haze. 'Zinc' flight had been caught out by time-over-target complications due to poor weather and in-flight refuelling delays. Instructed to orbit south of the target and await their turn to bomb, they were dangerously remote from the MiGCAP's protection. Capt Tran Hanh's MiG-17 flight was vectored onto them as they cruised at 375 knots with heavy bomb-loads, incapable of evasive manoeuvring.

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Although Connolly called a warning to 'Zinc' leader as his flight closed the distance on the MiGs at maximum speed, it was lost in the general radio chatter, and Tran Hanh was able to approach to around 1200 ft before opening fire at Capt James Magnusson's Thunderchief (59-1764) with his three cannons. The blazing F-105D fell away and its pilot died when the aircraft crashed south of Than Hoa. Tran Hanh's flight then split into two elements, and the second, led by Le Minh Huan, shot down the F-105D (59-1754) flown by 'Zinc' lead, Maj Frank Bennett, who drowned when his fighter crashed into the sea.

This 615th TFS F-100F (56-3836) at Da Nang has been fitted with a Type IXA Y-shaped double AIM-9B Sidewinder missile pylon inboard (wing station 55), indicating that it will soon be flying a MiGCAP mission. For training, the pylon could also fire a TDU-11/B 5-in HVA rocket fitted with four tracking flares from one side of the launcher as a target for an AIM-9B from the other side. The firing order for four AIM-9Bs was left inboard, right outboard, left outboard, right inboard, indicated to the pilot in the cockpit by four lights. Later in the war this aircraft flew many *Misty* FAC sorties (*L Holcomb via David Menard*)

Responding to the crisis, Lt Col Hays and Capt Connolly of 'Purple' flight engaged their afterburners and closed to within Sidewinder missile range of the VPAF flight. Connolly fired an AIM-9B, which narrowly missed Le Minh Huan's right wing, and a second Sidewinder was also fired unsuccessfully. Connolly followed up with 20 mm fire, but the MiG-17s manoeuvred to evade his bullets and dived for home.

Although Kilgus was confident that 'his' MiG could not have survived, he was only awarded a 'probable' kill because no one had seen a pilot eject or an aircraft crash. Requests to re-consider his claim were denied by the USAF, partly because President Lyndon Johnson had said that he did not want any MiGs to be shot down in case aerial engagements of this kind provoked North Vietnam's Russian and Chinese sponsors. However, the VPAF flight leader, Tran Hanh, later admitted that three of his MiG-17s and three pilots (Snr Lts Le Minh Huan and Pham Giay and Lt Tran Nguyen Nam) had been lost that day, all to USAF fighters, although North Vietnamese AAA may also have been partly responsible. No USAF claims were made apart from Kilgus'. In any case, Capt Kilgus painted a MiG kill marking beneath the windscreen of F-100D 55-2894 *Kay Lynne*, and another on the F-105G *Wild Weasel* that he flew later in the war, although he was ordered to remove the latter by the 44th TFS CO.

The USAF's first encounter with MiGs revealed problems that were to diminish its efforts in air-to-air warfare throughout the Vietnam conflict. Lack of training in dogfighting and AIM-9 Sidewinder use, restrictive rules of engagement and a North Vietnamese ground

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F-100D-31-NA 55-3774 of the 615th TFS at Da Nang in May 1965, the aircraft having been fitted with a dual Sidewinder pylon. The 'saddleback' door balanced on the aircraft's spine allowed groundcrews access to inspect the hydraulic fluid levels – an essential part of pre-flight preparations. The F-100 was a tough machine that could take surprising degrees of combat damage and remain flyable. On one October 1967 *Misty* sortie, Capt James Mack was surprised to be told by the 'boomer' in the tanker refuelling his aircraft that the saddle back fairing had detached when his F-100F was hit by flak and it had removed a large section of the right stabilator. Flying a solo mission, the crew had not noticed this damage. On missions including several F-100s the crews normally gave each others' aircraft a visual inspection after leaving the target area (*SSgt David Menard*)

Left
Capt Don Kilgus's personal F-100D (55-2894), with his name, that of his crewchief, A1C M Santiago, and the South Vietnamese flag painted below the windscreen. The nickname *Eileen* was added ahead of the 67 mission marks shortly after this photograph was taken. This was the 'Hun' in which Capt Kilgus scored his probable MiG kill (*via Joe Vincent*)

control network that could position its MiGs most favourably all put the F-100 escorts at a disadvantage.

The Super Sabre's shortcomings for the role were also highlighted. The jet's lack of 'flying boom' compatibility for aerial refuelling (standard on later USAF aircraft) on the long journeys to the Hanoi area became an increasing disadvantage, and the fighter's J57 engine tended to suffer from violent compressor stalls when afterburner was engaged during the high angle-of-attack manoeuvres used in aerial combat. Finally, and most importantly, it lacked the acceleration and manoeuvrability needed to oppose the nimble MiGs. This was hardly surprising as the F-100D (22,300 lbs empty weight) was more than twice the weight of the MiG-17F (8373 lbs empty weight).

Lt Col David Williams, who would later score one of the last MiG kills of *Rolling Thunder* in an F-4D Phantom II, flew some of the early F-100D MiGCAP missions over North Vietnam;

'I feel confident that the F-100 would not have fared well in the MiGCAP role because I do not believe that it could either out-turn or out-climb the MiG-17 or MiG-21, or out-dive or out-run the latter fighter. The F-100 suffered from a low thrust-to-weight ratio, and in a hard turn the aircraft would shudder, approaching a stall even with the leading-edge slats extended. The airspeed would then bleed off quickly, leaving the pilot in a terribly vulnerable position. I once experienced a compressor stall so violent that fire exited both the nose intake and tailpipe simultaneously, as verified by my wingman! It shook the rudder pedals so hard that I temporarily lost my foot contact with them. Such an event in air-to-air combat could spoil a pilot's day if he was, for instance, attempting to break into a hostile attacker.

'The F-4 Phantom II was successful in fighting MiGs largely because of the high thrust from its dual J79 engines, its rapid acceleration to supersonic speed, its good radar and its radar-guided AIM-7 Sparrow missiles. The F-100 lacked all of these features.'

Bob Wendrock echoed these reservations;

'We could not turn in an air-to-air engagement with anyone for long without running out of airspeed and/or fuel, especially in an "other than clean" (stores-carrying) configuration.'

The USAF was, in any case, keen to battle-test its new F-4C Phantom II. While Capt Kilgus and the 416th TFS were grappling with MiGs near the 'Dragon's Jaw' bridge on 4 April 1965, the first batch of 45th TFS F-4Cs was preparing to arrive at Ubon RTAFB. The new fighters commenced MiGCAP patrols on 9 April, replacing F-100Ds, and by 10 July they had downed two MiG-17s with AIM-9B missiles. By April 1966 three F-4C wings were based in Thailand and South Vietnam. Nevertheless, Super Sabres flew more MiGCAPs at the start of Operation *Steel Tiger* over Laos from 3 April 1965, four F-100Ds usually accompanying an identical

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number of F-105Ds on these missions. No further F-100 *Rolling Thunder* MiGCAPs were scheduled following the disastrous 4 April 'Dragon's Jaw' bridge mission, however.

The arrival of the F-4C signalled a change of role for the F-100D/F that reflected both the ground-attack priorities of the principal Super Sabre variants and the burgeoning 'in country' war in South Vietnam and Laos. An increase in American troop numbers from around 15,000 in 1964 to more than 500,000 five years later required a commensurate build-up of the tactical air support that was integral to US military doctrine. The US Army requested enough aircraft to provide five close air support (CAS) sorties per day for each battalion.

New bases were essential, together with a changed status for the F-100 units occupying them. Whereas numerous squadrons had carried out brief TDYs in a complex pattern during 1962-65, the widening conflict needed units to be based PCS (permanent change of station). During 90-to 120-day TDYs, too much of the deployment time was wasted on area familiarisation at the start, and units frequently rotated out of combat just as their proficiency and experience were reaching useful levels. An exception was the 481st TFS/27th TFW, whose 90-day TDY extended to six months because other units were being readied for PCS deployments, with the 531st TFS being the first to do so.

The squadron's F-100s arrived at Tan Son Nhut from Cannon AFB, via Clark AB, on 21 June 1965 under Operation *Two Buck 16*, which involved nine aerial refuellings and great secrecy. The 481st's first combat mission was flown the same day as part of the 33rd Tactical Group. Led by World War 2 fighter ace Lt Col Harold 'Bunny' Comstock, the pilots rapidly gained combat experience on CAS and alert missions, some of them at night. Like most 481st TFS pilots, 1Lt Peter Vanderhoef was not qualified for night sorties, and on his first such mission he estimated that his napalm drop occurred about ten feet above ground level! Glancing up, he could see trees *above* him illuminated by the flames.

On 19 July, a 481st TFS element repelled a VC attempt to overrun a Special Forces camp at Bu Dop, 100 miles north of Saigon. Assisted by flares from a C-123, Capt Norman Turner and 1Lt Donald Watson hit VC machine gun positions at low altitude in poor visibility. Norm Turner recalled;

'We were awakened at about 0200 hrs by the scramble phone and ran out to our jets. The ordnance load was two 500-lb bombs inboard, two LAU-3 rocket pods outboard and the usual 20 mm cannon rounds. As soon as we got airborne I could see a flare light to the north. It was a clear night and I thought it would be a fun mission – I was wrong about that part. We climbed to about 20,000 ft and I contacted the FAC. He said Bu Dop was in extreme danger of being overrun. A blacked-out

Lt Col Harold Comstock's menacing F-100D-26-NA, 55-3603 displayed the nose art and seven kill markings that adorned his P-47D Thunderbolt in World War 2. His 'Hun' also has 117 combat missions marked up, and the jet flew many more with the 481st and 416th TFSs from Bien Hoa before it was brought down by automatic fire during an 'LZ prep' mission near Katum on 6 November 1966. 'Bunny' Comstock passed away on 3 April 2009 (*Peter Vanderhoef*)

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C-123 "Smoky" was in a racetrack pattern over the camp dropping one flare on each pass. We had plenty of fuel so we just orbited, looking down on the camp.'

A solid cloud-base formed over the target and a new FAC, Hal Howbower, took over, informing them that machine gun fire was entering the camp from eight positions along a tree-line by a short runway close to the camp.

'I felt an urgent need to get down there and help', Turner continued. 'I had only been in-country three weeks and wanted to prove myself. I told Watson to hold high while I tried to get under the cloud deck. The FAC told me that the clouds were at about 500 ft AGL (Above Ground Level), and that there were very tall trees in the area. I knew that bombs were useless, so I set up the rocket pods "hot" for the "pickle" button and the guns "hot" for the trigger. I turned on the bombsight but left it mechanically caged. I flew out to the west until I was over dark ground, indicating that there was no cloud deck there, and started to descend.

Thirty-eight 2.75-in rockets surge from pods on Lt Col Comstock's F-100D-26-NA as he dives on a target in the Mekong Delta area. The 'Hun's' role as saviour of embattled troops was established early in the war after Gen William Westmoreland used his authority to call on tactical air support 'under emergency conditions' when a Special Forces team was ambushed in the Mang Yang Pass on 21 February 1965. Strikes by F-100Ds and B-57s held back the VC and enabled helicopters to evacuate 220 troops and Civilian Irregular Defence Group members from a situation where all would probably have been lost (*USAF via Peter Vanderhoef*)

'It was a dark night as the moon was in the last quarter, but flares lit the cloud deck, making a sort of surrealistic, indefinite horizon. I could not see how high I was above the ground, but descended as low as I dared, using the clouds ahead as a poor reference. When I came to the cloud deck I was instantly IFR (Instrument Flight Rules). Pulling up through the cloud, I made a 360-degree turn and decided to get lower. I distinctly remember thinking, "Tonight I'll probably die". I was more afraid of failing to help the guys on the ground, however. I flew towards the deck again. I thought I might hit trees at any moment, and remember lifting my butt up from the seat in a silly attempt to avoid contact. This time I found myself below the cloud deck and over a black void. Then I saw the camp below me.

'I was only a few hundred feet high and could see a burning building just outside the perimeter. There was smoke and haze everywhere and visibility was poor at less than a mile. The little runway was clear, and I could see a tree-line on the opposite side from the camp. I assumed this was the target area.'

At very low altitude Capt Turner made three passes in order to line up accurately on-target, 'then, out of the haze, the camp appeared directly under my nose, dead ahead. Without really thinking about it I instantly rolled into a 90-degree turn and let the nose fall to about a one-degree dive angle, aiming at the left end of the scrub line. There aren't bombsight settings for that sort of delivery, so I guessed. I pushed the bomb button twice at a slat range of about 3000 ft. The left rocket pod fired first, immediately followed by the right. I was blinded for about half a second, then I put the "pipper" on the tree-line in a 90-degree bank and held the trigger down. I walked the 20 mm HEI (High-Explosive Incendiary)

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along the line until I felt that I was about to hit the ground, then snapped the wings level and pulled up, probably inside 1000 ft slant range. I was through the cloud deck and into the night sky almost instantly. The FAC told me that all eight machine gun positions had stopped firing'.

Howbower then ordered Don Watson to 'give it a try'. Following this mission, both F-100 pilots were awarded the Distinguished Flying Cross (DFC), although Don Watson did not live to receive his.

Gary Nophsker, a three-tour F-100 veteran, summed up the 'night owl' use of the Super Sabre succinctly. 'Low altitude flying at night in the F-100 was ridiculous'. Inevitably, such dangerous missions increased the attrition of the Super Sabre force, although several squadrons experienced very light casualties. Indeed, the 309th TFS saw a full year of combat without losing a single aeroplane. However, the 481st TFS lost six jets, the first of which, on 31 July, took the life of 1Lt Don Watson. His fighter (55-2837) crashed during a napalm drop on a VC HQ north of Saigon. The squadron's second pilot loss was 1Lt John Hauschildt, whose jet (56-3074) was hit by small arms fire as he made multiple passes during a direct air support mission in central South Vietnam on 5 October. Capt Sam Holmes had survived after his aircraft (55-3613) was downed on a similar mission six days earlier, while Capt Joe Reynes ejected from his 'Hun' (56-3177) near the Mekong Delta on 20 September when its engine seized up following a loss of fuel and oil pressure due to flak damage. Peter Vanderhoef observed the F-100's final moments;

'He was dumping JP-4 in a sheet about a foot wide from the underside split line of his aeroplane, and we decided he had best leave before it lit off. Everything happened in slow motion just like the book said. Joe floated down as I watched his bird fly way out to sea.'

In 5025 combat flying hours, the 481st TFS's 18 Super Sabres eventually completed 3600 combat missions, averaging 30 sorties daily and dropping more than 14 million pounds of ordnance (including some of the first Mk 82 Snakeye retarded bombs to be used in Vietnam) and firing nearly 19,000 rockets, 25 AGM-12B Bullpups and 1.6 million rounds of 20 mm ammunition. Twenty-one squadron pilots flew more than 100 missions before the unit finally returned home on 27 November 1965, leaving its long-suffering F-100Ds for other combat units. The 481st TFS's 'Huns' had achieved a very impressive 98 per cent mission

SSgt David Menard in May 1965 showing off the 416th TFS 'Silver Knights' insignia, with an additional motto beneath it based on a television commercial for the foaming kitchen cleanser called Ajax, which claimed it was 'stronger than dirt'. This decoration usually appeared with a patch of bright silver paint behind it. F-104C Starfighters of the 479th TFW, which arrived two months previously for MiGCAP and air defence duties, are also visible (*SSgt David Menard*)

Seen at Tan Son Nhut in August 1965 with the 481st TFS, this F-100D-26-NA later transferred to Bien Hoa in November of that year, then to the 308th TFS/31st TFW at Tuy Hoa, where it was lost in action on 24 September 1968 (*USAF*)

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A neat flight of 481st TFS F-100Ds, with Capt Stephen Dvorchak's 56-3063 *THE SHADOW* in the foreground still showing the fading remains of an 'FW' buzz number on its fuselage. 55-3548 was 1Lt Tom Tilghman's aircraft, and Peter Vanderhoef's *PRETTY PENNY* is third from the camera. Peter completed 130 combat missions in his six-month tour with the 481st TFS and only took one hit – a single bullet through his wing slat – during this time. 'About one-fifth of our missions were in support of troops that were under attack', Vanderhoef explained. 'We were usually asked to get to the target rapidly and keep the VC from over-running our troops' position. Another one-fifth were to drop on known VC positions with no "friendly" troops nearby, and three-fifths were "tooth-pick" missions where we dropped bombs in the dense jungle on a spot thought to contain VC as chosen by a FAC. We converted large trees into tooth-picks with 750-lb bombs' (*via Peter Vanderhoef*)

ready rate, and not a single take-off had had to be aborted due to technical problems.

Average F-100 operational readiness rates averaged between 63 and 76 per cent for 1966-67. However, the F-100 NORS (Not Operationally Ready, Supplies) rate for October 1965 to December 1969 was below five per cent, a figure matched only by the Martin B-57. This statistic best illustrates the ingenuity of ground staff in locating spare parts. The sole F-100 logistics supply centre at Clark AB had soon been overwhelmed with demands for spares once *Rolling Thunder* commenced, so new depots were established in South Vietnam.

The high availability rate for the F-100 was partly achieved through the recruitment of more than 18,000 new technicians in 1966, increasing the maintenance force for each tactical fighter squadron by around 30 per cent to cope with the added demands of war. Deployed F-100 squadrons in 1965 tended to be self-sufficient for maintenance, although this often led to a duplication of resources. The main shortages in 1966-67 affected ordnance. Large stocks in place at the beginning of the war were depleted at twice the forecast rate, with B-52s becoming unexpectedly demanding users. Supplies were imported from bases worldwide, including those

Peter Vanderhoef with his personal Super Sabre 56-3285 *PRETTY PENNY*. Peter did the artwork, and that applied to several other 481st TFS aircraft, himself. The jet was 'shared' with 1Lt Jerry Salome who was married to the real Penny. The Martin/Maxson GAM-83A Bullpup A missiles seen on the inner pylons were introduced in 1960 as an important addition to the F-100's weapons menu. The missile was rarely fired in anger, however, as it proved difficult to guide under fire and ineffective against substantial targets. Indeed, 'Moose' Moseley dismissed it as 'a waste of time and money'. Joe Vincent commented, 'Bullpup required the delivery aircraft to fly a straight and very predictable flightpath behind the missile until impact because the pilot was guiding it. That was not a wise thing to do if you wanted to add Oak Leaf clusters to your Longevity Ribbon". USAF tactical aircraft operating in Laos delivered just 564 Bullpups between December 1964 and December 1967, compared with 331,704 2.75-in rockets and 259,432 M117 and Mk 82 bombs (*Peter Vanderhoef*)

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An F-100D in periodic maintenance at Tan Son Nhut AB. The hinged 'car-bonnet' door ahead of the cockpit reveals the forward electronic equipment compartment. The small angled fairing on the spine is the ram-air turbine exhaust door, while below that is the access hatch to the No 2 flight control hydraulic system and its reservoir. Hydraulic system ground-test connections extend from the compartment beneath the canopy hinge. Inevitably, the positioning of these un-armoured systems made the F-100, and other similar aircraft, highly vulnerable to ground fire (*Peter Vanderhoef*)

of US allies, but strike aircraft sometimes took off with partial or inappropriate ordnance loads for several months.

New tasks were added to the F-100 units' duties in 1965, including road convoy escort and propaganda leaflet 'bombing', which began on 14 April when an F-100D flight dropped hand-bills warning the inhabitants of four North Vietnamese towns of a potential increase in aerial attacks. The back seat of an F-100F also quickly proved to be a convenient vantage point for an official USAF photographer to shoot close-up film of attacks for training and publicity purposes. Such missions could prove hazardous, however, and four F-100Fs were lost with cameramen in the back while dropping napalm and strafing in 1966-67.

At Da Nang, the 416th TFS received on-site training in 'Night Owl' nocturnal attacks using flare pods to illuminate targets. The Seventh Air Force would only allow the most seasoned pilots to fly these hazardous low-altitude missions, and they passed on the benefit of their experience to others in the unit. Formal training in this 'dark art' was introduced for the 3rd and 401st TFWs in 1965 at Eglin AFB, Florida, and later at Fort Polk Army Base, Louisiana. Among the many problems associated with bombing by flare-light was the pilot's tendency to become disorientated through vertigo when he had to look down and back at the armament selection panel, situated behind the throttle quadrant on the left side of the cockpit. The extremely bright flares not only disturbed the pilot's depth perception, but also cast distracting shadows both on the ground and in the cockpit as well.

Night-flying F-100s made a major contribution to the relief of the US Army's 3rd Brigade forces when they became surrounded by three North Vietnamese Army (NVA) battalions that had penetrated the southern Ia Drang valley on 9 November 1965. Despite heavy losses from ceaseless air attacks on their two-mile long defensive line, the NVA attackers clung on. It needed the first ever use of B-52s in the CAS role, with daily attacks combined with tactical air strikes, to dislodge the enemy 19 days later.

Darkness and bad weather were the VC's favourite conditions for attacking isolated US outposts, and a blanket of low cloud at night would often leave fighters with insufficient clear-air altitude to make successful attacks. A two-day assault on the A Shau Special Forces camp occurred

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Armourers at work on a camouflaged F-100D in 1966. The ubiquitous MJ-1 'jammer' weapons loading vehicle had to be driven with great accuracy to place the bombs in the correct position for speedy loading, particularly when a last-minute change of ordnance was required for a mission. The basic loading format was for heavy weapons on the inboard pylons and lighter ordnance outboard. Each pylon had two internal explosive charges inserted near the front to eject ordnance and two more near the rear to jettison the pylon in an emergency. Pilots usually engaged afterburner when diving on a target, releasing the ordnance at around 450 knots. 'Slick' Mk 82 bombs were considered harder to drop accurately from an altitude of 3000-4000 ft than either high-drag M117 bombs or Snakeyes (*USAF*)

under these conditions in March 1966, and F-100s were unable to penetrate the cloud for long enough to identify targets.

The enemy's reliance on poor weather prompted the USAF to fit *Combat Skyspot* transponder equipment (Motorola SST-181 X-band radar) in Bien Hoa-based F-100s in early 1966. Aside from operating over their regular haunts in South Vietnam, *Skyspot* jets also flew radar-bombing missions over North Vietnam as pathfinder aircraft for F-105s, which dropped their ordnance on a command from the F-100 pilot who was in turn in contact with a ground-based radar controller. This method was used to continue the bombing assault when bad weather obscured targets for prolonged periods, but it required the formation to drop from a straight-and-level flightpath, thus putting it at risk from surface-to-air missiles or AAA. For example, Capt David Lindberg of the 531st TFS was hit by automatic weapons fire (in 56-3027) at 15,000 ft during a 30 March 1967 *Skyspot*. He ejected and was safely recovered, only to be shot down once again (in 56-3285) and killed on 21 May on a low-altitude napalm drop.

Skyspot ground radar stations were initially set up at Bien Hoa and Pleiku in the spring of 1966, followed by several sites during the course of the year, and each one was able to guide fighters to targets that fell within a 150-mile radius of the station.

Occasionally, these missions developed into unplanned attacks on SAM sites, as on 2 November 1966 when 355th TFW F-105s and two 416th TFS F-100Ds performed a low-altitude armed reconnaissance on the way home after expending their ordnance. In poor visibility both Super Sabre pilots over-flew a newly-established SA-2 'Guideline' surface-to-air missile (SAM) site and returned to attack it with their only armament, 20 mm cannon fire. Braving a storm of AAA, they made three strafing passes, destroying the 'Fan Song' radar van, a fuel storage tank, a missile on its launcher and several vehicles. Missions of this kind were later to evolve into the *Commando Sabre/Misty* F-100-directed attacks that became one of the Super Sabre's most important contributions to the war over Northern Vietnam.

Overall, pilots did not regard *Skyspot* (irreverently dubbed 'Skypuke') missions as an effective use of their skills. Dick Garrett explained;

'*Skyspot* sorties were usually flown at night. Allowing for winds, intel "lag" and sleep deprivation, it was a miracle if the bombs even hit the war zone. *Combat Skyspot* was common for night alert pad missions when there wasn't much going on in the war and you were an "asset" just waiting idly by. We had *Skyspot* beacons on some of our jets at Tuy Hoa, but we didn't need more than one per formation since everyone released on the formation leader's signal. They were usually two-ship missions, sometimes single-ship, but rarely large formations. We sometimes scrambled off alert only to end up with a "Skypuke". I didn't like them.'

The F-100's relatively light bomb load meant that large numbers of aircraft were needed to deliver an effective load with a reasonable chance of achieving accurate hits, but a *Skyspot* radar controller could only guide one flight at a time. Also, the fighters had to fly absolutely straight with their wings level. Slight turbulence or a one-degree course deviation over the drop point could cause bombs to miss by up to 350 ft, and this was clearly unacceptable, particularly for CAS. However, in the autumn

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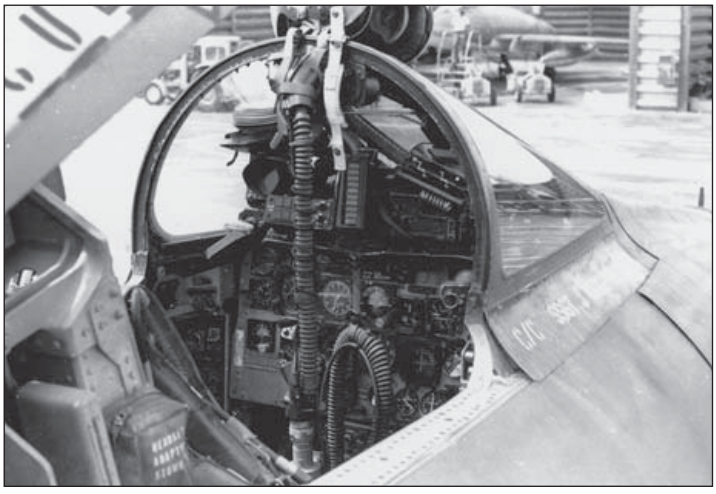

With the pilot's helmet and dangling oxygen hose perched on its canopy bow, this 416th TFS F-100D has maintenance folders stacked atop the instrument coaming on either side of the gunsight. Also visible to the left of the oxygen hose is the RHAW (radar homing and warning) scope, with its associated threat light display to the right of the helmet's chin-strap (*Dick Garrett*)

of 1967 more than a third of the 3000 strike sorties flown in the 'Tally Ho' area north of the Demilitarized Zone were *Skyspots*.

Most missions undertaken by F-100s during this period saw pilots effectively providing 'airborne artillery' for troops on the ground during myriad CAS sorties. For example, Operation *El Paso II* in June 1966 saw air strikes disrupt enemy preparations for a monsoon-season campaign, these missions ultimately allowing US Army units to win three major engagements against the NVA. Bien Hoa F-100s and 366th TFW F-4Cs performed no fewer than 350 strike sorties during *El Paso II*. One of these was a *Skyspot* mission by eight F-100s and an F-4 flight, the aircraft dropping ordnance through overcast from 10,000 ft on targets that were only 500 ft away from friendly forces. Although some of the bombs narrowly missed a pair of FAC O-1 Bird Dogs working the same target, the enemy force was driven off.

In November 1966 Operation *Attleboro* heralded an even larger-scale assault on enemy supply areas and entrenched positions, with F-100s from the 3rd and 35th TFWs playing a prominent role in a week of devastating attacks that drove massive NVA forces back in the direction

While cameras were generally disallowed on the flightline, pilots celebrating an end-of-tour flight was an occasion to record. Here, 416th TFS pilot Tom Fussell gets the ceremonial hose-down followed by champagne at the end of a mission in F-100D-26-NA 55-3620 at Phu Cat AB. The jet's 'HE' codes are correctly painted in FS36620 grey, with the 'last three' in white – not all units conformed with code application regulations. When the squadron moved to Tuy Hoa, and 31st TFW control, in May 1969 the codes changed to 'SE' (*Dick Garrett*)

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A pair of 3rd TFW F-100Ds return to Bien Hoa AB after an in-country strike in mid-1966. 56-3277 (510th TFS) had flown with the 18th TFW prior to entering 3rd TFW service at Bien Hoa in November 1965, and its scorched, recent camouflage at the 'hot end' of the fuselage indicates continued heavy usage. F-100D-61-NA 56-2942 of the 531st TFS moved on to Phan Rang AB in October 1968. Having survived the war, it was shot down in January 1986 while serving as a QF-100D target (*USAF*)

of Cambodia. In all, 1700 strike sorties and a week of *Arc Light* B-52 attacks were generated.

When the VC rallied in February 1967, the massive Operation *Junction City* (the only large-scale US Army airborne assault of the war) was hastily initiated in an attempt to trap enemy forces along the Cambodian border.

Whilst participating in this counteroffensive, a company of 1st Infantry Division soldiers were trapped in a VC staging area and almost wiped out by massively superior force. Total annihilation was avoided when a FAC directed four Phan Rang-based F-100Ds against the approaching enemy, and this held them back long enough for the Super Sabres and two Phan Rang B-57s to use ordnance to clear a landing zone for a helicopter-borne relief force. Three more F-100Ds dropped napalm and M117 bombs, forcing the VC to withdraw.

As the allied offensive progressed through 21 March, F-100s were called in for a night strike on VC attacking a US artillery post near Tay Ninh City, a short flight from Bien Hoa AB. With FAC direction, the F-100s delivered napalm, CBUs and 20 mm gunfire, causing almost 200 enemy casualties and negating the attack. Every time enemy forces mounted open attacks in an attempt to stall the *Junction City* advance, their assaults were broken by air strikes – it took more than 2000 fighter-bomber sorties to hold back the determined VC attacks.

The principal aim of VC battalion commanders in the field at this time was to surround isolated US positions and then overrun them. For example, a 1000-strong force surrounded 160 US soldiers manning an artillery base near Lai Khe on 18 March. The troops initially held the enemy at bay with a ring of tanks and armoured vehicles around the base, but at 0200 hrs the following morning the Bien Hoa alert pad scrambled a pair of F-100Ds to support the besieged soldiers. While the base commander illuminated the VC positions with the searchlights on his tanks, a FAC Bird Dog directed napalm and CBUs from the two Super Sabres, and 15 others that duly arrived on the scene a little while later. Caught in the open, the VC battalion was forced to retreat after suffering 227 casualties. Allied losses amounted to three US soldiers and 614th TFS pilot Capt Barry Delphin killed, the latter having been brought down (in 55-2912) by automatic weapons fire on his first ordnance pass.

Delphin was the 11th F-100 pilot to be shot down and the seventh killed in the first three months of 1967. All flying DAS/CAS sorties, they were hit either as they dived on their targets, pulled out from their bomb runs or flew low to drop napalm. Two of the three pilots who were recovered managed to fly damaged aircraft back to safe areas before ejecting, including 1Lt W H Hepler, whose aircraft (55-3714) was hit by groundfire on 15 February while supporting Operation *Tucson* northeast

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of Dau Tieng. Initially, Hepler's jet did not seem to be too badly damaged, but as he approached Tuy Hoa, he found it increasingly difficult to maintain control of the F-100. Like several of his squadronmates, he then chose to eject near the airfield, rather than risk trying to land. This was a wise course of action, as landing a healthy Super Sabre was a challenging enough prospect, let alone one with flight control damage that could easily go out of control on final approach.

Junction City's next battle was fought on 20 March when a large force of VC surrounded the Suoi Tre fire support base, invaded its perimeter and gradually knocked out the heavy artillery pieces that had been trained on them. A FAC O-1 was shot down and its two-man crew killed just before an F-100 flight arrived and began forcing back the encroaching VC as they emerged from the jungle. A surviving US soldier told of around 500 enemy fighters advancing on his position. 'Then this guy laid napalm right on top of them, and after that I didn't see them anymore'. In a textbook CAS performance, F-100Ds continued to drop CBUs on the retreating VC as US tanks pursued them into the jungle. The bodies of no fewer than 654 soldiers from the VC's 272nd Regiment lay around the perimeter of Suoi Tre at the end of the engagement.

Vital F-100 support for *Junction City* continued in its final phase on 30 March as pairs of Super Sabres frustrated further VC attempts to pick off isolated American units. FAC pilot Capt Geoffrey Engels described how, in darkness, 'We began walking the napalm towards the perimeter of a helicopter landing zone. We put it in at 75 metres, then two more at 50 metres and finally the fourth went in about 25 metres from our troops. Then we strung CBUs across the clearing and had the F-100 pilots give the area a general "hose-down" with a series of strafing passes as we slipped in the next flight, whose aircraft were armed with napalm and bombs. We put them into the same outcropping of woods from where the attack originated'. In all, 62 F-100Ds and 15 other fighters dropped more than 100 tons of ordnance on the surrounding jungle, leaving a further 600 VC dead. They were soon replaced, however.

The effect napalm had on the enemy depended on the type used, as pilot Jerry Key explained;

'Napalm canisters without fins tumbled when dropped, so it spread a lot more over the target. The finned "nape" acted more like a bomb in that it "flew" straight into the target. I saw my wingman drop a couple of finless canisters one day. They tumbled and hit together in the air. The resulting display was amazing – like big fingers of fire reaching out over the target. We dropped the outboard load (bombs or napalm) on the first pass, but the inboard stores were dropped separately. When I first went to Vietnam the aeroplanes were loaded with napalm outboard and

With four Mk 82 Snakeye bombs attached to its underwing pylons, F-100D-61-NA 55-2903 of the 31st TFW heads out on a CAS strike in 1966 shortly after arriving at Tuy Hoa from Homestead AFB. Many of the 'Huns'' 1965-66 missions were in support of a ring of Army of the Republic of Vietnam (ARVN) outposts that proved to be tempting targets for VC attacks. Ba Gia, only ten miles from Saigon, lost a whole battalion (a typical weekly ARVN loss at that time) in a VC ambush on 29 May 1965. The fortress was saved only by five days of CAS by 22 F-100s and US Marine Corps F-4B Phantom IIs. A week later Super Sabres flew a large proportion of the 644 strike sorties needed to keep the Dong Xoai Special Forces camp out of enemy hands. In October of that same year F-100s and B-57s held back a huge enemy force threatening Plei Me, near the Cambodian border. Ten days of incessant air strikes were needed to save both the base and a US armoured relief force that had been ambushed by the North Vietnamese (*600 Photo Sqn AAVS MAC USAF*)

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Spring-loaded air-brakes extend from this Mk 82 Snakeye bomb as it falls from 307th TFS F-100D-76-NA 56-3194, which will follow up with its finned napalm tanks and then a 20 mm strafing run. Napalm canisters were fitted with white phosphorus fuses for use over-land. A sodium-based fuse was available if the weapon was likely to be dropped in wet areas such as rice-growing fields, where a phosphorus fuse would fail to ignite. Ordnance was fitted with rings that engaged with hooks that were cranked down from inside the aircraft's pylons. Sway braces were then torqued to hold the weapon steady. Napalm could be dropped at lower altitudes than bombs for improved accuracy, as there was little danger of damage to the aircraft from bomb fragments. If a canister failed to ignite the FAC would report 'One off dry' (*USAF*)

high-drag (Snakeye) bombs inboard. This meant that the pilot had to make switch and sight-setting changes once the outboard ordnance was dropped. Later, the load was changed to all-napalm on one bird and all-bombs on the other. The pilot's workload over the target was then reduced to a safer level.'

As the 1968 Tet Offensive approached, the enemy refined its tactics for over-running US outposts. A major assault during the autumn of 1967 on two camps near Loc Ninh required American advisors to liaise with a FAC from a deep bunker beneath part of the camp that was already enemy-occupied. Bien Hoa F-100s and AC-47 gunships were summoned to obliterate NVA artillery positions, and the insurgents were once again driven back by tactical airpower that saw ordnance delivered to within a few yards of allied troops. Air strikes coordinated with artillery and probing sorties by ground troops continued throughout October until the NVA finally abandoned its assault on Loc Ninh on 7 November, having lost more than 850 men to 450+ tactical air strikes.

Having not lost a jet in almost two months, the 3rd TFW had F-100D 56-3040 of the 510th TFS downed by small arms fire during a CAS mission near Loc Ninh on 19 November. Capt Duncan Smyly, who had been scrambled to assist US troops that had been engaged by a larger enemy force, was killed during his second napalm pass.

Like other USAF aircraft, F-100s began to receive the TO 1-1-4 Southeast Asia camouflage scheme in January 1965. With their engines idling, two silver aircraft flank a camouflaged 'Hun', while another newly-painted jet comes in to land in the background. These machines are from the Tan Son Nhut-based 481st TFS. Some of the first camouflaged F-100s arrived at Bien Hoa AB for the 510th TFS and, as seen here, they routinely flew alongside the squadron's silver aircraft. F-100D 56-3097 later moved to the 531st TFS, and the jet was hit by small-arms fire as it climbed out from Bien Hoa on 14 January 1970. 1Lt W H Baker ejected successfully (*USAF*)

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F-100D-61-NA 56-2920 of the 510th TFS taxis out from its revetment at the start of a CAS mission. The aircraft is armed with four Mk 82 LDGP bombs. When carrying an ordnance load-out such as this, pilots engaged afterburner as soon as the brakes were released. Ignition was then supposed to take place within two seconds. The pilot would commence rotation at 154 knots and lift off at around 179 knots, aiming for a cruise speed of 330 knots at around 6500 ft (*Norman Taylor via David Menard*)

Bien Hoa AB had acquired sand-filled pre-fabricated ARMCO metal revetments by the time ex-50th TFW F-100D-91-NA 56-3304 was photographed serving with the 90th TFS. Armed with Snakeye bombs and rocket pods, the fighter has also been adorned with the squadron's 'pair o' dice' insignia on the nose-wheel door (*Rick Norris via Benolkin*)

The next VC operation against camps near Bo Duc included strategies to defeat the deadly F-100 strikes through the fielding of more AAA batteries along the east-west attack routes that the 'Huns' would have to follow to avoid crossing the Cambodian border. The enemy also used smoke bombs to conceal targets and signal flares to warn gunners of approaching F-100s. Despite these ruses the Bien Hoa pilots succeeded in placing ordnance within 20 ft of defending forces without losing an aircraft, and after 11 days of strikes the VC withdrew on 8 December, having gained valuable experience that they would use to deadly effect during Tet.

HOMES FOR 'HUNS'

By 1968, half of TAC's squadrons had been deployed to Southeast Asia, and many of those that remained in the USA had become training squadrons for combat units. The frequent movement of F-100 personnel continued, despite the introduction of PCS squadrons. Forty-six pilots flew with the 416th TFS at Bien Hoa between July 1966 and March 1967, but only 16 completed a full year's assignment. Five served for more than six months and several were in-theatre for less than two months before being reassigned. Morale and combat efficiency were adversely affected by this instability. To make matters worse, each and every pilot within the squadron was also assigned various administrative duties, and these usually had to be performed at day's end after he had completed two combat sorties.

By 1968, entry to an F-100 training course inevitably resulted in a posting to a South Vietnamese 'Hun' base. New airfields were required to accommodate this influx, adding to South Vietnam's three jet-capable locations. To alleviate overcrowding at Da Nang, which had seen 42 Super Sabres sharing facilities with more than 100 other resident aircraft and 40+ transients as early as March 1965, the F-100 force was dispersed. The

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Each pilot had to drag about 50 lbs of personal equipment out to the aeroplane, including a 25-lb parachute, which, in the F-100, was attached directly to the pilot rather than the seat. Ejection required several actions within seconds. A pilot had to stow loose equipment, actuate his bail-out bottle, stopcock the throttle, lower his visor, brace himself in the seat with heels on the footrests and head hard against the headrest and then pull up one of the canopy latch releases on his seat. Failing that, he held the canopy switch 'open', pulling the canopy emergency jettison handle and allowing the air stream to separate the canopy. As a last resort, he could 'tuck chin in firmly and eject through canopy'. Ejection was activated via one of the ejection triggers. Seat belts were supposed to open a second after ejection, but the pilot then had to kick himself free of the seat and manually operate the parachute ripcord. It was not always possible to accomplish all this in a blazing F-100 just seconds away from crashing (*USAF*)

416th TFS, led by Lt Col Emmett Hays, moved to the equally cramped Bien Hoa AB in June 1965, before returning to the USA the following month. It was then sent PCS to Tan Son Nhut in November to support the 173rd Airborne Brigade. In June 1966 the 416th TFS re-joined the 3rd TFW, which had been at Bien Hoa since November 1965 controlling the 510th TFS and later adding the 531st TFS and (in February 1966) the 90th TFS from Misawa AB. In a year from April 1967, the 65 pilots from these three units flew the majority of the 54,000 sorties launched from Bien Hoa. Second Air Division policy was to focus all of its F-100 units in the III Corps area of South Vietnam, sending the B-57s to Da Nang for more northerly missions.

The 307th TFS had been assigned temporarily to the 6251st TFW, a provisional wing established ahead of the 3rd TFW's arrival, at Bien Hoa AB on 24 June 1965. It was replaced by the 308th TFS, which later moved to Tuy Hoa's 31st TFW. The 531st TFS arrived from England AFB with its own aircraft in November 1965 as a Bien Hoa PCS unit. F-100Ds of the 429th TFS from the 474th FBW at Cannon AFB also appeared briefly between July and December 1965. At peak strength, the 3rd TFW 'owned' 100+ Super Sabres, each one averaging one sortie daily for a total of 13,000 in the wing's first six months at the base.

Pilots joining a Super Sabre unit in Southeast Asia had a brief initiation period. Capt Don Schmenk was given a single F-100F back-seat ride to practise instrument landings, followed by two CAS missions. He flew his first F-100D CAS mission a week later.

Bien Hoa, only 15 miles from Saigon, had been a major VNAF hub since 1955, and in 1961 it became the USAF's first foothold in mounting the counter-insurgency operations that soon grew into a major air war. B-57Bs initially arrived in response to the Gulf of Tonkin incident in August 1964, and on 8 July 1965 the 6251st TFW was established to manage TDYs by the F-100D-equipped 416th and 531st TFSs. Two resident *Farm Gate* A-1 Skyraider squadrons were displaced in February 1966 to make room for the 90th TFS F-100Ds. In that month Adm Sharp asked for another ten USAF fighter squadrons to be based in Vietnam, and for a time it seemed that Bien Hoa might have to accommodate a USAFE F-100 unit as well.

Two 10,000 ft runways and an ever-expanding complex of parking ramps and rocket-proof shelters accommodated the base's aircraft and their 64,000 take-offs and landings per month. Pilots initially survived in wooden 'Dallas' huts with no air conditioning or hot water, resident rats and indifferent catering at the mess hall. Mission briefing often began at 0530 hrs throughout the week, although some squadrons operated around the clock. Sundays provided respite from escort missions for VNAF Skyraiders as it was their day off. Super Sabre operations continued at Bien Hoa until the 3rd TFW began to phase out the aircraft between November 1969 and 15 March 1971, when it moved to Clark AB. Bien Hoa was duly returned to the VNAF, who used it until the base was captured by the North Vietnamese on 25 April 1975.

Phan Rang AB, built between mountains and the central coastal area, was a former French airbase that had to be massively expanded to accept the 366th TFW in March 1966 – this wing was replaced by the 35th TFW in July. Initially, the wing managed the F-100s of the 352nd,

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Flames stream back from propellant in a 2.75-in rocket that has split open on launch from its LAU-3A pod on this 352nd TFS F-100D early in 1967 over the II Corps area. The aircraft has an unpainted light grey fin-cap (*600th Photo Sqn AVVS*)

614th and 615th TFSs (plus the 389th TFS with F-4C Phantom IIs) at Da Nang. In October 1966 the Phantom II-equipped 389th TFS occupied the space vacated at Da Nang by the F-100 units.

The first Phan Rang squadrons lived out of tents, enduring primitive maintenance facilities, regular theft of base property and deep mud while construction work proceeded. A concrete runway was completed by October, but until then the 'Huns' flew from AM-2 matting that was frequently undermined by rain, creating an uneven surface. Large sections of AM-2 had to be regularly replaced by the *Red Horse* engineering teams. There was a shortage of engines, test equipment and parking space, with no protective revetments and noisy conditions that destroyed sleep patterns. By the time Lt Bob Wendrock arrived in April 1968, however, things had improved significantly;

'Except for getting attacked periodically by mortar and rockets it was much like a Stateside base. We had access to the sea for recreation, although it and our local village were off-limits most of the time. We had a very good, long concrete runway and a PSP (pierced-steel planking) runway that we used only in emergencies. It was always interesting operating off the PSP due to its narrowness and undulation. Our long runway was very important when taking off "heavyweight", especially when we started carrying triple ejection racks (TERs) with three bombs on each inboard pylon. I believe we fairly routinely used most of the 10,000 ft runway on hot days.'

The widening war demanded a third base for F-100s, and in February 1966 *Red Horse* construction teams constructed one at Phu Cat, a former VC training centre in an agricultural area near Qui Nhon, 230 miles from Saigon. This, the most northerly F-100 base, used a temporary airstrip while concrete was poured at record rates to prepare runways and hard-standings for the incoming 37th TFW. Eventually, after a construction period dogged by constant VC sabotage, aircrew could enjoy two-storey, air-conditioned accommodation and sleeping quarters that were as comfortable as the constant noise of aircraft and construction work would allow. Dick Garrett recalled;

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Maj Dick Garrett pre-flights a Mk 82 Snakeye bomb on his 416th TFS F-100D. He flew more than 200 combat missions from Phu Cat and Tuy Hoa for a year from November 1968, many of them over Laos. Quite often the apparent illogicality of the Rules of Engagement for their missions baffled pilots like Dick Garrett and Peter Vanderhoef, the latter recalling 'We flew one mission against a village on a north-south road with a small river running through it from east to west. We were told to hit the northeast quadrant of the village, but were explicitly told not to drop anything on the southwest quadrant because a meeting of a dozen VC and NVA generals was taking place there. We did as we were told' (*Dick Garrett*)

'The first thing that impressed me was the golf course! Although not much of a course, it was the thought that counts. Also, the quarters were trailers set up in "quads". Our squadron, the "Silver Knights", had "castle towers" on each corner of one of the quads and a concrete-covered patio equipped with a large SS BBQ grill. Phu Cat was a first-class base, new from end to end, although small compared with other bases. We were protected by the Republic of Korea Tiger Division, a kick-ass unit that struck fear into the heart of every Vietnamese, friendlies and bad guys alike.'

The wing was established at Phu Cat on 1 March 1967, with the 416th TFS arriving from Bien Hoa (on 15 April 1967) and the 612th TFS Det I from Phan Rang. The latter flew a combat mission en route to its new home on 8 June. By the end of February 1968 the 37th TFW had flown a total of 18,000 combat hours and introduced *Commando Sabre* operations in which F-100Fs flew as *Misty* FACs.

Such heavy utilisation of the 203 Super Sabres (split between 11 squadrons) in-theatre by December 1966 began to overtax the F-100s' airframes. The loss of Capt Duane Baker in 416th TFS F-100D 55-3766 while strafing a VC camp on 6 June 1967 was initially attributed to groundfire. When a recovery team led by 37th TFW vice-commander Col Lee found the wreckage and Baker's remains in the jungle, it soon became clear that the 'Hun's' wings had separated from the fuselage before it crashed.

Fatigue could have also caused the structural failure, fuel leaks and explosion of several other F-100s during this period, including 55-3618 on 10 May 1967, in which Maj Len Niski died, and 55-3510 on 13 June 1967, killing 1Lt James Cumiskey. Niski was making a second strafing pass at low altitude and Cumiskey was dropping napalm, also close to the ground, but neither pilot was able to initiate ejection, suggesting catastrophic failure rather than the official verdict of AAA damage.

The crash of Capt Merrill McPeak's *Thunderbirds* F-100D during a formation display demonstrated the problem graphically. The central wing box failed during a 6.5g aileron roll and the 'Hun' exploded, depositing a smoke-stained McPeak on his parachute in front of the crowd-line at Laughlin AFB, Texas. Vietnam F-100s were temporarily limited to 4g manoeuvres while a reinforcing strap was installed across bolt-holes where the fatigue cracks had occurred during IRAN (inspect and repair as necessary) in Taiwan. A more extensive rebuild programme was eventually needed, however. Maintenance and inspection at the bases in-theatre was hampered by lack of a computerised spares supply system, groundcrews frequently having to spend hours searching in supply warehouses for urgently needed parts.

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1968 brought a massive reinforcement of the 37th TFW, with two more squadrons – the 174th TFS Iowa ANG with 22 F-100Cs and the 355th TFS – being the last F-100 units to deploy to Vietnam. During the course of the year Phu Cat's tactical fighter units were replaced by two F-4D squadrons from Da Nang. Two F-100 units (the 355th and 416th TFS) transferred to the fourth 'Hun' base, Tuy Hoa, while the 612th TFS Det 1 returned to 35th TFW ownership at Phan Rang.

Walter Kidde Constructors Inc, with close USAF supervision and large incentives, was responsible for the creation of the fourth F-100 base at Tuy Hoa, completing the majority of the work at the coastal fishing village site within six months from June 1966 thanks to the employment of quick-build modular units. Aircraft ramps were constructed from the sometimes-slippery AM-2 aluminium matting, which was also used for one of the base's runways that ran parallel to a later concrete runway, both of which were approached from over the coast. Fuel was piped directly from Vung Ro Bay through a 25 km pipeline that was often sabotaged by the VC. It was fed to the F-100s from 'hot turn' rubber bladders or fuel trucks.

Early fighter crews had to survive in six-man tents, eating in shifts in a catering trailer, enduring sand, grit and salt air and a continuous 25-knot cross-wind that made the difficult business of landing an F-100 harder still, but the compensation was access to an excellent beach. As Dick Garrett remembered, 'We had a nifty beach club where impromptu rock bands would emerge from the ranks and melt the war away for hours at a time. We lost a couple of pilots in the over-water final turn, probably due to spatial disorientation since the runway was perpendicular to and touching the beach. This was because a mountain blocked its other end, precluding a normal final approach angle on that end and forcing us to approach over water, sometimes even with a tail-wind but always when bad weather rolled in and we had to fly instrument approaches'.

Originally intended as a B-52 base, Tuy Hoa was transferred to the Seventh Air Force due to the threat of VC attacks on SAC bombers. It accepted the 31st TFW as its resident unit, with the 308th TFS flying in from Bien Hoa on 15 November 1966 after completing a combat mission in the Central Highlands en route – the squadron arrived 45 days early. Two more units, the 306th and 309th TFSs, joined the 308th on their official 'due date', 6 December, to complete a combat-ready wing that was expanded further in June 1968 following the addition of two ANG squadrons – the 136th TFS from New York and the 188th TFS from New Mexico. Both units flew their F-100Cs from Tuy Hoa until May of

Seen here nearest to the camera, F-100D-51-NH 55-2884 joined the 31st TFW in January 1965 and operated with the unit from Tuy Hoa AB between August 1968 and August 1970, when it was reassigned to the 35th TFW at Phan Rang AB. Following retirement, the jet was put on display at Rickenbacker AFB in Columbus, Ohio. Photographed before the application of tail codes, the fighter is armed with BLU-1/B napalm and rockets for another CAS sortie (*Joe Vincent*)

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While at Misawa AB with the 21st TFW, F-100D-51-NH 55-2879 had far more appealing markings. By the time this photo was taken the jet had been reassigned to the 31st TFW (from November 1966). Seen here in afterburner, the F-100 is loaded with CBU-28/A dispensers. The later CBU-42A was also an effective anti-personnel weapon ejected from the flat-bottomed SUU-38A dispenser which held 540 of the baseball-sized bomblets. CBU-34s were also used, and their bomblets, when they hit the ground, each projected four trip-wire fuse triggers that were virtually invisible to enemy troops (*USAF*)

Bien Hoa AB came under heavy VC attack on the night of 12 May 1967, and F-100D-56-NH 56-2954 was one of five aircraft destroyed by the 189 mortar rounds fired into the base. It had been at Bien Hoa since 16 July 1965. The state of the drop tanks is a reminder that these were retained on the jet except in emergencies (*USAF via Chris Hobson*)

the following year, when they were replaced by the two squadrons displaced from Phu Cat, the 355th and 416th TFSs. The 31st TFW continued as a five-squadron wing (the largest F-100 organisation in Southeast Asia) until its deactivation on 15 October 1970.

The 31st TFW's size was reflected in its combat record, with 100,000 sorties flown by 12 September 1969. Like the other F-100 bases, the activity at Tuy Hoa was ceaseless, with flights lining up for individual takeoffs at 15-second intervals, lighting afterburners with a thunderous crack immediately following brake release. By 1968 Vietnam-based units could draw on a maximum of 490 F-100s – almost half of the USAF Super Sabre inventory – although less than 320 were 'in theatre' at once.

Despite constant efforts to improve the security of the bases, they were exposed in open country and constantly at risk from enemy sappers. Bien Hoa was repeatedly assaulted by VC satchel bombers and snipers, but a major attack by three large enemy units during the Tet offensive was beaten off. However, much worse damage was caused on 16 May 1965 by a malfunctioning bomb which set off explosions that killed 27 men and destroyed ten B-57Bs and 15 A-1Es on their closely-packed dispersal area. F-100s at this and other bases were subsequently protected by 12 ft high, sand-filled, ARMCO aluminium revetment walls and, from 1968, corrugated steel and concrete 'wonder arch' shelters. These structures, combined with the huge area of each base and the inaccuracy of VC rockets, helped reduce the levels of damage inflicted on the F-100s.

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COLOUR PLATES

1
F-100D-90-NA 56-3264 of the 510th TFS/405th FW, Don Muang Airport, Thailand, April 1961

2
F-100D-21-NA 55-3502 of the 429th TFS/474th TFW, Tan Son Nhut AB, Republic of Vietnam, December 1965

3
F-100F-11-NA 56-3868 of the 522nd TFS/27th TFW, Clark AB, the Philippines, November 1965

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4
F-100D-71-NA 56-3063
The Shadow **of the**
481st TFS/ 27th TFW,
Tan Son Nhut AB,
Republic of Vietnam,
July 1965

5
F-100F-16-NA 56-3954
of the 612th TFS/366th
TFW, Da Nang AB,
Republic of Vietnam,
November 1964

6
F-100D-85-NH 56-3405
Tonya **of the 307th TFS/**
31st TFW, Bien Hoa AB,
Republic of Vietnam,
summer 1965

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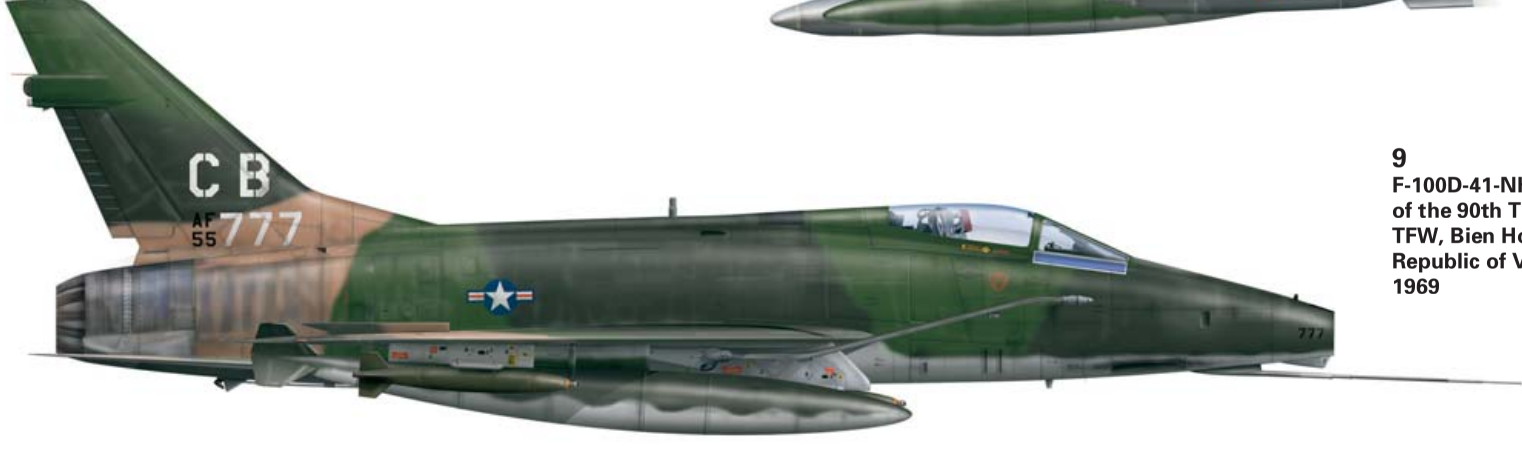
7
F-100F-21-NA 58-1226 of the 6234th TFW *Wild Weasel* Detachment, Korat RTAFB, Thailand, December 1965

8
F-100D-71-NA 56-3163 *Day Tripper* of the 308th TFS/31st TFW Tuy Hoa AB, Republic of Vietnam, 1966



9
F-100D-41-NH 55-3777 of the 90th TFS/3rd TFW, Bien Hoa AB, Republic of Vietnam, 1969

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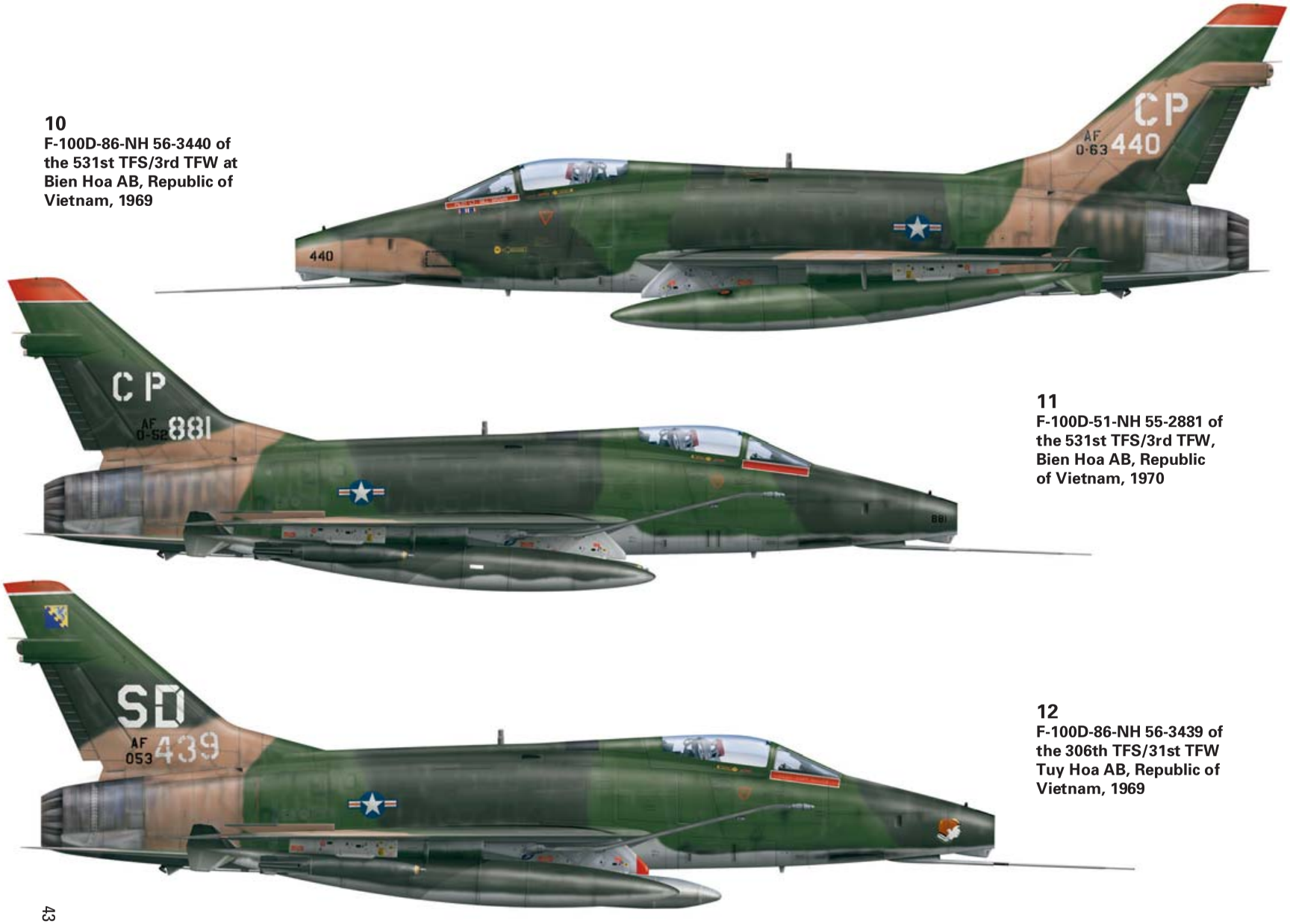

10
F-100D-86-NH 56-3440 of the 531st TFS/3rd TFW at Bien Hoa AB, Republic of Vietnam, 1969

11
F-100D-51-NH 55-2881 of the 531st TFS/3rd TFW, Bien Hoa AB, Republic of Vietnam, 1970

12
F-100D-86-NH 56-3439 of the 306th TFS/31st TFW Tuy Hoa AB, Republic of Vietnam, 1969

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13
F-100D-21-NA 55-3550 of the 308th TFS/31st TFW, Phan Rang AB, Republic of Vietnam, September 1970

14
F-100D-71-NA 56-3048 *MILLIE'S MOOSE* of the 309th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1969

15
F-100D-91-NA 56-3233 *PEG O' MY HEART* of the 306th TFS/31st TFW at Tuy Hoa AB, Republic of Vietnam, 1969

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16
F-100F-11-NA 56-3813 *SOUL SISTER* of the 306th TFS/31st TFW at Tuy Hoa AB, Republic of Vietnam, 1969

17
F-100C-2-NA 53-1737 of the 188th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1969

18
F-100D-86-NH 56-3459 *Iron Butterfly* of the 355th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1970

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19
F-100D-31-NA 55-3749
BLOOD, SWEAT 'N' TIRES
of the 355th TFS/31st TFW,
Tuy Hoa AB, Republic of
Vietnam, 1969

20
F-100D-86-NH 56-3456
DARLENE'S DEAR **of the**
355th TFS/31st TFW,
Tuy Hoa AB, Republic of
Vietnam, 1970

21
F-100D-26-NA 55-3658
LETHIFEROUS LOLA **of**
the 615th TFS/35th TFW
Phan Rang AB, Republic
of Vietnam, 1971

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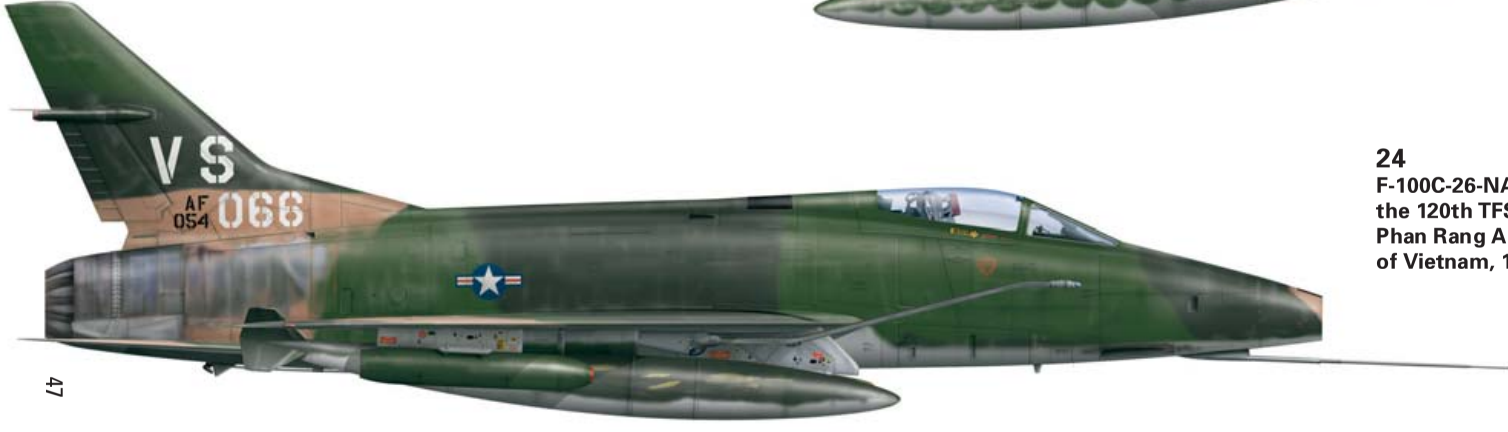
22
F-100D-71-NA 56-3053 *BETTIE BOOP* of the 615th TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1971

23
F-100F-21-NA 58-1232 of the 352nd TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1970



24
F-100C-26-NA 54-2066 of the 120th TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1968

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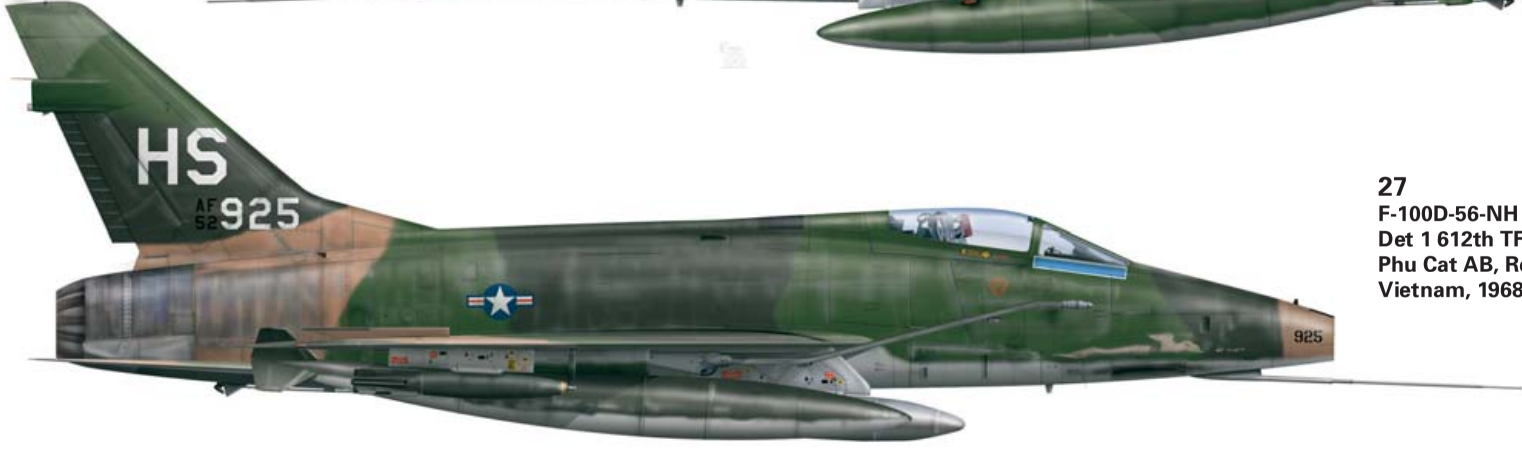
25
F-100D-71-NA 56-3025 of the 614th TFS/35th TFW Phan Rang AB, Republic of Vietnam, 1970

26
F-100D-26-NA 55-3620 *FULL HOUSE* of the 416th TFS/37th TFW, Phu Cat AB, Republic of Vietnam, 1966



27
F-100D-56-NH 55-2925 of Det 1 612th TFS/37th TFW, Phu Cat AB, Republic of Vietnam, 1968

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THE MISSION

The USAF's responsibility in South Vietnam was to support ground troops, and the F-100 was its workhorse in this role until mid-1971. Unlike the war in North Vietnam, where air power achieved specific goals such as the destruction of key bridges, industrial capacity and airfields, the 'in country' war's achievements were often impossible to measure except in terms of statistics for missions flown and ordnance dispensed. The latter was usually expended on imprecise targets in jungle terrain that hid the enemy, swallowed a vast tonnage of bombs and into which aircraft and their crews could disappear without trace. The exceptions for F-100 crews were those missions where their efforts were directly responsible for saving embattled troops or army outposts.

These achievements were apparent from 1965 onwards when, for example, F-100s and other fighters drove back a determined VC assault on Ba Gia in June. There were to be many similar situations, notably the relief of Khe Sanh in 1968, where tactical fighters caused disastrous enemy losses while minimising US casualties. Often, these missions were short-notice diversions from other targets. Capt Al Lewis was scheduled to hit a target south of Tuy Hoa when a FAC contacted him urgently with news that a US convoy had been ambushed by VC;

'We made contact and rendezvoused with the FAC. The bad guys were too close to the "friendlies" for us to use bombs, so we jettisoned our ordnance and proceeded to strafe the ditch lines on either side of the convoy approximately 50 to 100 yards from the "friendlies". Apparently, our 20 mm cannon runs broke the assault, and by the time other fighters arrived on the scene the bad guys were far enough away from our troops for bombs to be used.'

Daily operations for most of the four F-100 wings had settled into a fairly predictable pattern by 1967. Essentially, it consisted of CAS or direct air support (DAS) for the US troops fighting in the central area of South Vietnam. The differences between CAS and DAS were often ill defined, but DAS – Saigon's category for the majority of missions in 1966 – usually involved an element of interdiction of enemy transport, troop concentrations, supplies and logistics, rather than strikes on enemy troops in direct combat with allied forces. Dick Garrett gave the pilot's view;

'We didn't use the term DAS, although sometimes we used CAS

Capt Allen R Lewis with his 306th TFS F-100D-71-NA 56-3035 *MISS DIAL* at Tuy Hoa, from where he flew 217 combat missions in 1969-70. His aircraft (and boat back home) were named after Mary Dial Bridges, to whom he was married from 1962 until her death in 2008. She was known as 'Miss Dial' to their friends (*Allen R Lewis via Joe Vincent*)

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in our jargon. We usually talked more in terms of the specific nature of the mission such as TIC (troops in contact), road and ford cuts, "bombing monkeys", *Combat Skyspot* (which was more "bombing monkeys"), interdiction (anything out-country on the Trails), supply area attacks, *Ranch Hand* or helicopter escort, landing zone preparation, etc. CAS usually implied in-country, with a lower threat level in terms of the size of the rounds (typically small arms and automatic weapons) that usually permitted low-angle delivery. Interdiction usually implied out-country missions with a higher threat, usually AAA from 12.7 mm to 57 mm.'

Dick Garrett (right), his crew-chief and F-100D-26-NA 55-3630 – a 'Hun' that spent most of its time from December 1966 onwards in the Far East. The jet operated from all four F-100 bases in South Vietnam and survived until 1988, when it joined the FSAT fleet at Tyndall AFB, Florida (*Dick Garrett*)

FACs

The use of FACs began in 1962 with the arrival of five USAF 'Jungle Jim' instructors at Bien Hoa to train VNAF FACs. The 19th Tactical Air Support Squadron was activated at Bien Hoa in June 1963 with four Bird Dogs, and it pioneered the target-marking tactics – by day and night – that became standard for the four O-1 FAC units that were in Vietnam by April 1965 and the 250 FACs who were working there a year later. In August 1965 the Twelfth Air Force established a Tactical Air Patrol Party that attached FACs and Air Liasion Officers (ALOs) to ARVN brigades. Eleven of the officers were F-100 pilots, and many other Super Sabre flyers duly completed combat tours as FACs, while FACs sometimes logged flights in the back seat of an F-100F for familiarisation purposes.

CAS sorties to relieve troops under attack were guided by FACs in single-engined O-1 Bird Dogs cruising at 85 mph, or slightly faster O-2 'Oscar Ducks', as well as by ALOs working alongside soldiers on the ground. The latter were used on virtually all F-100 missions, calling in the air strikes, describing the target location and maintaining contact with the FAC (usually a fighter-qualified pilot) as he managed the attack from above, 'jinking' constantly to avoid ground-fire and trusting that his 213 hp engine would keep his fragile 1600-lb aircraft aloft. FACs often flew a figure-of-eight pattern parallel to the F-100s' intended line of attack so as to give him the optimum time facing both the target and the Super Sabres.

The FAC's handbook stated that he 'must properly match the ordnance to the target. Normally, when requesting ordnance for an airstrike, say what you do not want – i.e. "I don't want CBU", etc. If you specify certain ordnance it will take extra time to unload and re-load the fighter. This may cause the fighter to arrive too late to be used effectively on your immediate target'. F-100 flights often carried a range of ordnance for this reason, and they always had the 20 mm strafe option.

The time between troops making contact with the enemy and ordnance being dropped averaged one hour in 1966. More than half of this time delay was usually caused by troops leaving their request for air

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support until the very last minute, as fighters were usually able to reach targets within half-an-hour – sooner if they were diverted from other targets. 'Air diverts' were therefore favoured over ground alert flights wherever possible. Establishing communication between the FAC, ground commander and fighters also took time, as did marking the target and orientating the F-100s onto it. Often, the target (usually enemy troops in contact with US forces) would be very close to American positions, so precise coordinates and accurate target marking were vital. In the majority of encounters with enemy forces (90 per cent in 1966), the fire-fights were over too quickly to summon air strikes.

A FAC, directed by the Seventh Air Force Direct Air Support Center (DASC), would attempt to identify the target – usually by over-flying the coordinates at low altitude and attempting to see through the dense jungle that normally hid enemy movements. He then passed his target description to the F-100 flight leader and made himself more vulnerable to the defences by stopping his evasive 'jinking' manoeuvring long enough to fire a 2.75-in white phosphorous smoke target-marking rocket to provide a reference point for the fighters' ordnance. The weapon left the aircraft with what reporter Frank Harvey once described as a 'loud, explosive honk'. Ground troops fired smoke grenades marking their own positions to assist the pilots with another vital reference point. The FAC knew the F-100s' ordnance options, and he would calculate their best approach directions.

His tactics were derived directly from the Korean War era and pioneering FAC work by Capt John Teague (later an F-100 pilot) in Laos. He relied to some extent on the enemy holding fire while he sought them out, rather than giving away their positions by firing at him, thereby attracting vengeance from fighter-bombers. However, his job became increasingly dangerous as the war progressed. In all, no fewer than 346 propeller-driven FAC aircraft would be lost, with 220 pilots killed. FACs who crashed in Laos were usually killed by local militia.

A FAC advised the incoming F-100 flight of winds, height of terrain and trees, safe bail-out areas and the location of ground forces, before discussing attack directions and choice of ordnance. He then instructed the 'Hun' flyers to 'hit my smoke' with their ordnance, and follow up with 20 mm strafing passes for which pilots could switch to either two or all four M39 cannons. If necessary, he would watch for enemy fire following the F-100s on pull-out, pass on adjustments for re-attacks and subsequently estimate bomb damage. Usually, strafing passes were requested after the initial ordnance drops, although this clearly increased the risk to pilots. Generally, 'Hun' pilots would continue to attack for as long as they could, though Capt S R Winborn's *ninth* pass against a VC target on 14 May 1967 was an extreme case,

The two halves of F-100D-56-NH 55-2924 *Miss Midge* at Phu Cat AB on 2 September 1970. Its pilot misjudged his altitude at the bottom of a bomb run and the aircraft ingested large items of foliage from the forest. The 'Hun' was in the shelter for a month undergoing repairs supervised by crew chief Mike Del Rossi (*Norman Taylor*)

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Combat wear and frequent re-painting add to the attrition of a hot afterburner section, as seen here on 308th TFS F-100D-76-NA, 56-3163. The Super Sabre's high angle of attack limited forward vision on landing, despite the downward slope of the nose ahead of the windscreen. Pilots relied on peripheral vision, particularly when flying the F-100F from the rear seat (*M Bilcik*)

When it was assigned to Jerry Key, F-100D-21-NA 55-3550's nickname was *PAMELA LEE'S DREAM*, inspired by his wife at the time. Jerry recalled, 'We were not allowed to have the name painted on the nose on a combat mission, so I went to the flightline and, with the help of crew chief Sam Magee, we painted it on the nose, took a couple of photos and then removed it. The whole process took about an hour'. Sam painted *Lil' Kitten* on the other side of the nose in honour of his wife-to-be (*Jerry Key*)

and his F-100D (56-3904) took fatal small arms hits on the final strafing run.

Pilots rarely saw much of the target, or the outcome of their strikes, as Don Schmenk recalls;

'I usually just saw the smoke marker, but I have seen weapons caches, trucks set out as a trap and barges on the Mekong River. I once saw a guy running and another on a motorcycle that they wouldn't let me shoot at!'

In favourable conditions troops could later establish the real success of the mission by exploring the bombed area, but their main concern was to have driven off the enemy.

In more open country the ALO/FAC could use tree-lines, buildings or terrain features to provide bombing references, and have a better visual impression of the success of the strike. Very often these missions were short-ranging, and F-100 pilots could expect to fly two per day, or more if a large US troop concentration was threatened. DAS flights were ordered against roadways, suspected supply depots, bunkers or troop concentrations. Although the air support task might easily be dismissed as 'bomb-dumping', it was a complex and demanding exercise that required skill, precise coordination and experience.

By 1967 the air support system was so well established that ground commanders often requested air strikes against targets for which the DASC felt artillery to be more appropriate. Also, typically of a war where statistics for ordnance tonnage and missions flown seemed paramount, there was concern that FACs were often asked by army commanders to find targets for already-scheduled F-100 missions. This sometimes resulted in attacks on targets of very dubious military value with ordnance that was inappropriate for the mission.

ORDNANCE

Some Super Sabre pilots preferred the Korean War-vintage 750-lb M117 bombs for accuracy and blast effect compared with the later Mk 82 500-lb low-drag 'slicks'. For tree-clearing missions to prepare landing zones (LZ prep), the bombs were fitted with 'daisy-cutter' fuse extensions so that they exploded above ground.

'Tactics were dictated by the nature of the threat, available fuel, weather, weapons loads, visibility, etc.' Dick Garrett explained. 'We usually carried "hard loads" (Mk 82s or M117s, some with "daisy-cutter" fuses for LZ preps) on out-country missions, although there were some CBU (various types) missions and a few with rockets, which were worthless in triple-canopy jungle. In-country could be "hard" or "soft" loads of napalm and rockets in mixed loads with bombs, including high drag models. Bombs usually had selectable fusing between nose and tail – instantaneous detonation or 0.25 seconds usually – but high-drag Snakeyes and M117s had a nose fuse only'.

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F-100D-66-NA 56-2995 *CONG KILLER* was assigned to Lt Richard Goddard of the 309th TFS in 1968-69. It was originally delivered to the 77th TFS/ 20th TFW at RAF Wethersfield at the end of 1957, and progressed through the 50th TFW at Hahn AB, West Germany, and the 4510th CCTW at Luke AFB, prior to arriving at Tuy Hoa in December 1968. At the end of its subsequent career with the Massachusetts ANG's 131st TFS, 56-2995 was placed on a plinth at Otis ANG Base in 1984 (*via Joe Vincent*)

Pilots were also required to escort *Ranch Hand* defoliation aircraft on missions codenamed *Trail Dust*, provide cover for transport aircraft making supply drops to forward troop bases and clear forest areas on 'tree bombing' sorties to make landing sites for helicopters inserting army patrols. Ahead of a helicopter-borne troop insertion, Super Sabres often simultaneously attacked several potential landing sites to confuse the enemy. This too could be dangerous, as 1Lt G K Bankus was downed by machine gun fire in ex-*Thunderbirds* 416th TFS F-100D 55-3603 on 6 November 1966 while strafing a forest clearing. Two other former *Thunderbirds* aircraft were shot down during the conflict, namely F-100C 53-1740 on 14 March 1969 while on a 174th TFS ANG deployment to Phu Cat AB and F-100D 55-3737 of the 614th TFS on a 24 September 1969 mission.

Both CAS and DAS missions could be flown by the 15-minute alert pair of F-100s or on a pre-scheduled basis. Although these missions became routine, they could also prove to be some of the most rewarding, as Maj Dick Garrett remembered;

'Usually, some of our "grunts" were calling for CAS because they were taking fire, so the task was to get a good ID on the bad guys' positions, separate the good from the bad and roll in with your "shake and bake" (bombs and napalm) ordnance "combo" with as many passes as fuel and ordnance would support. I've seen times when a helicopter FAC would fly right over the enemy position, getting the shit shot out of himself, just to drop a smoke grenade on enemy craniums so that we could have a good "mark". The O-1 Bird Dog and longer-ranged O-2 FACs were no less resourceful when it came to the TIC situation. I'd use every drop of gas I had to stay on station as long as I could in order to help these guys out, then divert to the nearest US airfield. Such an opportunity didn't present itself often, but when it did you knew that your aeroplane ticket over to 'Nam had just paid for itself.'

The need to reload aircraft with appropriate ordnance in response to a ground commander's request for immediate CAS could cause delays

F-100D-71-NA 56-3130 in 614th TFS markings. The 16-ft braking parachute was housed in a compartment under the rear fuselage, and on release its riser cable was drawn out from an external recess, covered by small spring-loaded doors. The cable was attached just below the rudder and could be jettisoned (*USAF*)

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in launching F-100 flights. Carrying mixed ordnance of napalm and bombs also limited the loadout to two 500- or 750-lb bombs for most sorties. Nevertheless, in Bob Wendrock's opinion, '"Snake and nape" was probably our best load for the majority of our missions. Certainly, it was best for TIC CAS. We also carried CBU-2s, but most pilots didn't like them because we had to fly a long, low, steady and level delivery run. We infrequently carried some Mk 117s, but they created too much drag. They went off with a pretty big bang though'.

Demonstrating a novel way of hiding nose art from officialdom 352nd TFS F-100D-86-NH 56-3379 (apparently fresh from a repaint) bears the name of the crew-chief's (right) girl, Ginny Lee, on 10 March 1971. BLU-27 napalm canisters were painted olive green, with a single three-inch red band on the nose. Antennas for the APR-25/26 RHAW can be seen above and below the intake lip, which also contains the antenna of the AN/APG-30A radar ranging system for the guns. The horizontal band on the nose-gear door was yellow and black (*Norman Taylor*)

Expending BLU-27Bs from above 1000 ft reduced the area the weapon covered compared with a lower-altitude drop, but 1000 ft minimum altitudes were insisted upon for all but Snakeye deliveries to minimise losses from ground-fire. Pilots also had to maintain a minimum 2000 ft altitude except when diving to attack, returning to 2000 ft after each attack pass. This meant that they seldom saw the effects of their ordnance. However, low-altitude drops exposed pilots to small-arms fire.

Indeed, seven of the 25 'Huns' downed in 1966 were hit by small-arms fire while dropping napalm, followed by another seven in 1967. Capt D B Moose's 614th TFS F-100D (56-3431) was straight-and-level at 300 ft when it was riddled with machine gun fire on 16 November 1966. He was rescued, but 531st TFS pilot Capt W C Hersman (flying 55-3809) was killed while making his fourth napalm run in similar circumstances on 12 October 1966. Capt D M Wanless and his wingman were launched on 23 August 1969 from Phan Rang to set fire to VC food crops 55 miles

Lt Col Schroder's F-100D-31-NA 56-3307 is re-armed at Phu Cat AB. This 615th TFS aircraft was part of a detachment from the 35th TFW sent to Phu Cat to push back VC forces threatening the base in March 1971. The guns were a crucial part of the armament, pilots being advised that if they fired the weapons at speeds above Mach 1 and then had to enter a slight dive, they should also turn slightly to avoid intercepting their own 20 mm bullets. New pilots were sometimes alarmed by the noise created by the gun barrels vibrating in their blast tubes under normal flight conditions. The USAF Fighter Weapons Wing briefly tested an F-100 with two SUU-16/A gun-pods on its wing pylons, but the idea was not pursued (*Norman Taylor*)

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from the base. On his second napalm run his F-100D (55-2895) was caught in the conflagration of his own napalm and he had to eject. Capt James Brinkman's 510th TFS F-100D (55-3717) was destroyed in the same way on 1 April 1968, the pilot having no chance to eject. Finally, and unnamed 615th TFS pilot had to eject from 55-3574 when he lost control after hitting trees while making a napalm drop on 26 January 1970 – one of several such incidents involving the F-100.

F-100D-71-NA, 56-3181 from Phan Rang AB's 352nd TFS was poised for take-off from Phu Cat AB on 11 March 1971, but when the pilot lit his afterburner the engine suffered a major malfunction and exploded. Norm Taylor was watching from the adjacent taxi ramp. 'The "Hun" had four 500-lb bombs on board, so we ran like hell. The fire department did more damage than the fire. The aircraft wasn't repaired, being dumped at Phu Cat when the unit departed' (*Norman Taylor*)

Maj Fred Thompson, a 416th TFS pilot, misjudged the weight of his aircraft while making a napalm drop on 20 March 1968, flew through tree-tops and dragged the shredded jet (55-3606) to a sufficient altitude for ejection – and capture by the lorry drivers he had just bombed. Many other pilots returned with damage to wing slats, pylons or fuselage surfaces from 'wooden bullets'. Crew chief Sam Magee recalled F-100D 55-3550 coming home with a tree-branch stuck in its tailplane.

The Super Sabre's comparatively modest thrust margins (compared with later generations of fighters) could create some hair-raising moments at low altitudes, as Bob Wendrock of the 352nd TFS recalled;

'We were working targets in the IV Corps area beneath a low undercast (600 ft AGL) with reduced visibilities. The FAC gave us a real target in the form of a two-storey building – very rare for us in the South. Because poor visibility caused difficulties in keeping both the FAC and my wingman in sight, the "wheel" (circle around the target that we were flying) kept getting tighter and tighter. Once cleared by the FAC, I rolled in, and put my napalm right in the doorway of the building, much to the delight of the FAC. Unfortunately, I had no idea what my airspeed was when I rolled in, other than that it was greater than 290 knots, since the leading edge slats would have extended at that speed or lower.

'After releasing the weapons I pulled back on the stick to start my 4g recovery. The nose came up and the aircraft rotated, but the flightpath continued towards the ground. I can still visualise the horizon coming up to meet the aircraft. I don't know how low I got before the flight vector recovered, but I was thankful that my target run was over rice fields and not over trees as I would have hit them for sure. I very nearly became a fireball just beyond the target. I never rolled in again without knowing my airspeed. Most of the F-100s we lost in the South were from hitting the ground, and I came very close to adding to that grim tally that day.'

Super Sabre pilots soon earned a reputation with FACs and troops for great accuracy and a willingness to press home their attacks at low altitude against considerable enemy opposition. ALOs would often call for bombs within very close proximity to endangered 'friendly' forces knowing that the 'Hun' pilots could be trusted to drop on target. Many F-105 units had a similar reputation, and FACs preferred them, F-100s and (from 1967) Cessna A-37 Dragonflies to F-4C Phantom IIs, which also had very

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F-100D-86-NH 56-3415 from the Phan Rang's 614th TFS 'Lucky Devils' taxis out for a mission from Phu Cat AB on 7 March 1971. Shelters were required at all the bases. Phan Rang lost two aircraft in a VC attack on the night of 25 January 1969, F-100C 54-1956 of the Colorado ANG and F-100D 56-3301 of the 35th TFW both being destroyed with 82 mm mortar fire and 107 mm rockets – a reminder of the vulnerability of US bases in South Vietnam compared with their counterparts in Thailand ***(Norman Taylor)***

rudimentary bombing equipment and often dropped too fast from too high an altitude to achieve accuracy.

On one occasion a New Jersey ANG F-100C dropped a Mk 82 bomb directly on the narrow opening of the ventilation shaft for a tunnel system close to US troops, collapsing a section of the passages from which the VC would have surrounded the American platoon.

F-4s also ran out of fuel very rapidly at lower altitudes, limiting their 'loiter' time. 'Hun' pilot Lee Howard commented, "We prided ourselves on being far more accurate than the F-4 "station wagon" folks, often working to within 50 m of "friendlies", and occasionally closer'. However, as previously noted in this chapter, pressing the attack too closely could have serious repercussions for the 'Hun' pilot. On 20 July 1965, for example, an unnamed 429th TFS pilot had to eject from his F-100D (56-3170) when it hit a tree during a CAS pass.

Attacking at such low altitudes against a hail of ground fire made Super Sabre operations increasingly hazardous. The majority of losses occurred during bombing or strafing runs, particularly as pilots pulled up from their attacks. In 1967 the toll of pilots lost in such situations spiked alarmingly, either because they were wounded by small-arms fire or too low to eject successfully. Of the 35 F-100D/F combat losses that year, 19 involved the death of the pilot.

For those who were able to retain control of their battle-damaged aircraft long enough to bail out, the safest route to take prior to ejecting

Stifling fumes billow from F-100D-56-NH 55-2923 as it makes a cartridge-fired engine start. During the 18 to 20 seconds of cartridge burn time pilots were strongly advised to use their oxygen masks. Engine light-up was supposed to occur within about ten seconds of pressing the starter and ignition button, with the engine reaching idle power (60 percent) a minute later. A misfire or 'hangfire' of the cartridge meant a delay of at least five minutes before it could be replaced. The MA-2 'Ma Deuce' external pneumatic starter unit gave a much cleaner start-up procedure (*Joe Vincent collection*)

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This F-100F (56-3874) from the 352nd TFS was photographed at Udorn RTAFB, Thailand, on 31 May 1971. The inboard store appears to be a travel pod converted from a BLU-1 napalm canister (*Don Larsen via Norman Taylor*)

was straight out to sea from the narrow South Vietnamese land-mass. It was far easier for amphibians or helicopters to retrieve downed aviators from the Gulf of Tonkin. In 1967, capture and imprisonment was a fate reserved only for F-100F crews who flew over North Vietnam. By 20 December 1968, when Maj Forrest Fenn was picked up by an HH-3E rescue helicopter after his F-100D (55-3647) was shot down over Laos, the rescue forces had recovered 1500 US airmen. Fenn had been hit on a similar mission on 24 August and managed a dead-stick landing in his damaged F-100D at Binh Thuy emergency airfield, only to have the aircraft subsequently destroyed by VC mortars.

Details pertaining to CAS missions were decided by the flight leader, depending on the target location and the severity of the threat. 'To spread out the impact, we made multiple passes', Don Schmenk explained. 'When operating "out-country", which in our case was Laos, we usually limited ourselves to two passes, and only strafed if there were troops in contact. "In-country" (South Vietnam), we used 30-degree dive bomb passes, while "out-country" we employed 45-degree dives. Most of us considered Cambodia to be the same as Vietnam when it came to tactics'.

Inevitably, the nature of the terrain, the elusiveness of the enemy and the frequent bad weather all reduced the effect of many of the F-100s' missions, and their results were often hard to evaluate in the absence of witnesses on the ground. Pilots began to refer to such strikes as 'monkey bombing', and one F-100D bore the nickname *Tree Surgeon*. However, the CAS pilots manning the 24-hour alert pad were responsible for saving many US lives with their quick response to calls for intervention by trapped or threatened forces. The cost was 20 more F-100s lost on strike sorties in 1966 – the highest attrition for any of the tactical fighters in use outside North Vietnam. The overall loss rate at the time for 'in-country' tactical fighters was one per 1587 sorties.

Stewart Cranston, later to become a three-star general and vice-commander of Air Force Systems Command, taxis out for his end-of-tour mission. F-100D-85-NH 56-3456 is loaded with Mk 82 bombs. On return he was hosed down by his twin brother George, a *Misty* FAC pilot in 1969, before the ceremonial bottle of champagne. Stewart Cranston always flew with a long Model 1905 bayonet strapped to his belt, against the advice of the squadron maintenance chief, who regarded it as a hazard if ejection was required (*Bill McDonald*)

For night operations with F-100s and the B-57s, which increasingly

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took on that task and carried four times the F-100's bomb-load, the FACs had the slight advantage of the US Army AN/AVG-3 Starlight scope. Battery powered, and able to amplify light emissions 40,000 times, it worked quite well in clear air, but the smoke, dust and vibration synonymous with combat degraded the image badly. The heavy unit was, in any case, hard for the FAC pilot to wield while he was flying the aircraft. When F-100F *Misty* FACs subsequently used the scope they encountered similar problems, with canopy distortion to add to them. However, there were times when it was useful in detecting vehicle targets or enemy camp fires at night. F-100C/D pilots had no such night-flying aids and lacked the radar that equipped Thunderchiefs and Phantom IIs, giving them limited night-attack capability.

The F-100's heavy windscreen frame, gunsight and RHAW equipment above the instrument panel coaming tended to restrict the pilot's forward visibility (*Jerry Key*)

'Radar would have been no use in any case', recalled Don Schmenk. 'We relied on flares dropped by others, or we dropped our own. Everything that we dropped depended on the skill of the pilot. The aircraft had to arrive at the correct spot in space at the right dive angle, correct altitude and exact airspeed at the same time to ensure an accurate delivery. There were no gadgets to help us. We relied solely on skill!'

Compared with the next generation of strike aircraft like the F-111A and A-7D, the bombing equipment was extremely basic. 'The F-100 had a fairly simple "hard" gunsight oriented to the aircraft's fuselage', Bob Wendrock explained. 'It didn't have a continuously computing impact point or even a wind-drift stabilised sight for bombing. You therefore had to learn where in space to put a fully drifting aircraft, compensating for the winds, to get consistently accurate bombs, assuming that you had enough arming time for the bomb fusing, sufficient clearance from bomb fragmentation for your own safety and adequate pull-out altitude. It is amazing how good we got at doing that in the F-100'.

F-100D-56-NA 55-2914 was one of several 'Huns' that were hit by small-arms fire moments after take-off. It started to burn as it climbed out of Phan Rang AB on an 18 June 1968 mission and Maj G J Butler had to eject only ten miles from the base (*USAF via Chris Hobson*)

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Col Bill McDonald with one of his F-100Ds during his time as 308th TFS maintenance boss from November 1968 to December 1969. In his opinion, 'The F-100 presented some tough maintenance issues as the aft section was a "bear" to pull for an engine change, wing slats often got stuck and the anti-skid system and fuel-quantity indication presented problems' (*Bill McDonald*)

Another view of *Miss Midge*. The CRT scope for the AN/APR-25 RHAW is visible above the pilot's name-plate (*via Norm Taylor*)

Using *Combat Skyspot* was another option for night missions, as Joe Vincent explained;

'All the *Skyspot* drops that I did – and to my knowledge it was the same for all 31st TFW squadrons during my tour (October 1969 to September 1970) were at night, usually between 2200 hrs and 0400 hrs. They were harassment missions in our minds. When I first got to Tuy Hoa we did two-ship *Skyspots,* but later in my tour we were launched single-ship from night Alert to do a *Skyspot* drop. They were about the only time that missions didn't use a FAC too. Other than a *Skyspot*, I never flew a strike mission that was controlled by the flight leader rather than a FAC.'

At Phan Rang in 1968-69, night flying was standard practice for 35th TFW 'Huns' using 'Blade' call-signs, as Bob Wendrock recalled;

'We pulled night alert every night for the entire year I was there. It wasn't uncommon to launch several times in a night, usually for a TIC mission or night interdiction. Right after take-off, sometimes from a deep sleep, a night formation re-join was a challenge, especially in the mountainous terrain around Phan Rang. The F-100 was NOT a good night formation aircraft. Internal instruments were dismal compared with today's, and the external lights were made to induce vertigo.

'Night missions were always a challenge, particularly diving through the flares, which was also very vertigo-producing. Additionally, the attitude direction indicator instrument had a tendency to tumble, and needed to be manually erected after high Gs. Most of the time the target was marked by a burning phosphorous log, and flares were dropped to illuminate the target area. Whether we had to stay under the flares or dive through them depended on ordnance. Normally, our alert birds had standard "snake and nape". Of course, once the mission was over you had to get re-joined again – always a challenge.'

The end of *Rolling Thunder* released F-105s for CAS missions in the South, but the intensity of F-100 operations increased anyway and losses rose to a peak of 61 in 1968. In the wake of the Tet offensive, attacks on US facilities continued, and pilots were often targeted against enemy forces threatening their own bases. For example, on 17 May 1968 Capt T J Mattox had barely completed his take-off (in 56-2949) from Phu Cat when he had to set up attack passes on troops only five miles from the runway. Hit on his third pass, he ejected and made the short trip home in the base's HH-43. The following day Capt Roland Obenland's F-100D (55-3548) took automatic weapons fire as he made a napalm drop only six miles from his home base, Bien Hoa, and the jet crashed before he could eject.

Even taking off and returning to base became hazardous, as snipers often hid close to the runways, awaiting aircraft. On 6 March 1968 1Lt W V Tomlinson was hit on approach to Bien Hoa (in 56-3269) after a CAS mission, and he ejected just a mile from the base perimeter.

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Even there, he had to be rescued fast before he was captured by VC insurgents. Maj G J Butler's aircraft (55-2914) became a sniper's target as he lifted off from Phan Rang on 18 June 1968, and he landed by parachute a few miles from the base. In darkness the problem worsened. Maj J S Ellard's 'Hun' (55-2900) was hit as it left Phan Rang on a 4 July 1968 night sortie, but he was not aware until later in the mission that much of his fuel had leaked away through the bullet holes. A subsequent crash-landing on the small Binh Thuy airfield wrote the jet off.

Many *Misty* F-100F FAC-controlled missions were flown against enemy transport on the trails, like the quick-reaction example Capt Jim Brasier flew in 1968 with the 306th TFS near the Mu Gia Pass;

'I had flown two combat sorties that day, and it was about 1530 hrs when the Operations Officer, Maj Jim Graham, called me into his office and said the *Misty* FACs had just caught a convoy of trucks that needed fighters to stop them moving further south. He told me to take Lt Mack Sennett and head north, refuel off a tanker in Thailand and contact *Misty* en route for the mission. We quickly loaded two "Huns" with two LAU-3 rocket pods outboard and two 750-lb bombs inboard and headed north. We hit the tanker, took on some gas and continued northwards. The weather was clear, with a broken to overcast layer of clouds at about 6000 ft. We contacted *Misty* and he briefed us on the situation. It was unusual for a convoy to be travelling during the day, but they did and were discovered. A flight of F-100s were pulling off the target, and I could see trucks burning through the murky under-cast. *Misty* put in a "Willy Pete" rocket to mark the target and cleared us in "hot".

'On the first pass I was going to fire my rockets at the head of the convoy and Mack was going to fire at the rear. I rolled in and could barely make out the flames of a couple of burning trucks, but not much more. It was still bright sunlight above the under-cast, but as I entered the murk in a 30-degree dive it instantly turned to a hazy, smoky night-time, and my only point of reference was the burning trucks. I put the pipper on

1Lt Joe Vincent's F-100D-51-NH 55-2901 *Colleen* bore the middle name of the pilot's wife at that time. 'When I arrived at Tuy Hoa the only thing painted on the aeroplanes were pilot/crew chief names. We had more pilots than jets, so some of us had to wait for the manning to drop before we could paint our name onto an F-100. We were forbidden from applying nose art or any personal markings. Then one day we were told to get our crew chief to paint our names on the aeroplanes, as well as a nose art, but latter was not to be too large'. The shamrock and long-stemmed Irish clay pipe were used instead of Joe's original idea – he suspected correctly that *Memphis Belle II* (Joe originated from that city) might have already been used. One of Joe's favourite nose-art examples was a 308th TFS F-100 featuring a caricature 'Hun' in heavy boiler-plate metalwork and the name *'Big Iron Bird'*. 'If you stepped back or re-focused on the surrounding area of camouflage, you'd then notice that the camouflage had been redone to depict the shape of a hand flipping the bird!' (*Joe Vincent*)

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Homeward bound from a mission towards the end of its tenure with the 309th TFS F-100D-20-NA 55-3576 returns to Tuy Hoa (*Joe Vincent*)

The constant threat of VC mortar and rocket attacks necessitated the addition of prefabricated 'wonder arch' shelters to the revetments at US bases in South Vietnam. Bien Hoa AB, under frequent attack, protected its 3rd TFW F-100s and its later VNAF occupants until the base was surrounded by the North Vietnamese and evacuated on 25 April 1975 (*Bruce Gold*)

the lead truck, fired both pods of rockets and started my 4g pull-out.

'As I reached level flight during the pull-out, there was a long burst of 23 mm and 37 mm tracer rounds fired from left to right just in front of my aircraft. They were not being fired up at my jet, however, the tracer – there must have been at least 1000 rounds – heading almost horizontally across the sky. I knew I was dead, or had been hit. I instinctively pulled as many gs as the "Hun" would take, and was back on top of the murk before I knew it. I checked the gauges, but there were no fire lights or smoke – I just couldn't figure out why my jet wasn't hit. I must have entered a valley with mountains on my right where the AAA was coming from.

'Mack had called in "hot" for his first pass. I told him to fire his rockets from above the cloud deck. When he questioned this, I replied "Because they are trying to kill us down there!" He said he could see the burning trucks through the murk, and targeted the rear vehicles. We made a second pass and dropped our "750s" from above the cloud. *Misty* said we had stopped the convoy.'

Dick Miles had hit the convoy just before Jim's attack, and he told the authors, 'On my first roll in the AAA was so heavy that I aborted the pass and came back around. The next time I jinked all the way down,

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rolling out just above the trees and going like hell. I laid down the CBU which started truck fires and set off a SAM, which headed south. Lt Metz joined up on me, and I put my 20 mm down on the AAA site and he dropped his two napalm cans. That was a hell of a mission'.

F-100D-71-NA 56-3082 from the 612th TFS returns to Phan Rang AB post-mission. Pilot Jim Icenhour recalled that, 'Landing took a little experience to master. You only got slow once after you did your first (and usually only) "sabre dance". From then on you kept a close eye on the power and airspeed in the landing pattern. Final approach was flown at 166 knots (plus fuel allowance) with full flaps on the F-100D. The drag chute worked fine below 150 knots, and was literally guaranteed to fail at 151 knots or greater. With a failed chute the jet became a high-speed tricycle that didn't want to stop, but the tail-hook worked well' (*via N Taylor*)

By 1967 all jets operating in-theatre were wired for CBU delivery (apart from ANG F-100Cs, which were rewired a little later), using up to 17 different varieties of cluster munitions by war's end. Almost half were the devastating CBU-24, a US Navy-originated design that dispensed 600 bomblets from a canister over a wide area using a timed or proximity fuse. Also available was the CBU-30, which dispensed bomblets containing riot control gas for use where enemy troops had infiltrated allied positions, ruling out the use of explosive ordnance. Unused CBUs was usually jettisoned in the sea, as they were considered to be too unreliable to bring back to base. Landing an F-100 was challenging enough without the risk of bomblets escaping from their canisters on touch-down. Three F-100 losses in 1970 alone were attributed to pilot error on landing after CAS missions.

Super Sabre units were heavily involved in repulsing the many North Vietnamese incursions during the short-lived Tet offensive that commenced on the night of 30/31 January 1968, attacking enemy forces dug in close to Tan Son Nhut after a VC assault team had invaded part of the base. Bien Hoa was also infiltrated that night, and the VC came close to destroying its Direct Air Control Centre. One F-100D (55-3658) was destroyed and a massive armament store near Long Binh was detonated with a blast that almost blew an O-1 FAC, flying two miles away, out of the sky. Although many other South Vietnamese targets were assaulted the other F-100 bases were undamaged.

For the following month the number of USAF airstrikes reached an unprecedented 10,000 as US forces sought to capitalise on North Vietnam's failure to spark a large-scale insurrection in the South. More than 240 sorties were flown by Super Sabres against VC embedded in the outskirts of Saigon. Great accuracy was needed to place 750-lb bombs on particular buildings to collapse tunnel networks dug beneath them, or napalm on specific houses that the VC had fortified in outlying villages.

F-100C-26-NA 54-2031 *Mumble Machine* was with the 120th TFS Colorado ANG at Phan Rang AB for a year from April 1968. The nickname was painted in red/orange, as was the unit's wildcat insignia on the tail and the nose-gear door. On returning home the squadron flew F-100Ds for three years (*Norman Taylor*)

Enemy attacks on US and ARVN encampments continued throughout the year. In May the Special Forces camp at Kham Duc had to be evacuated, and F-100s were prominent among the

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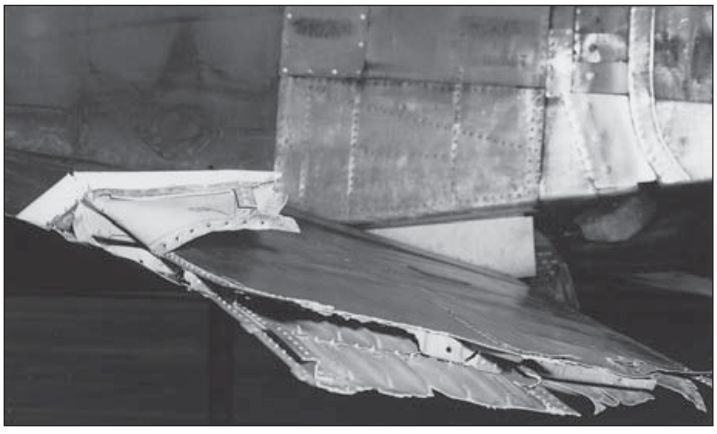


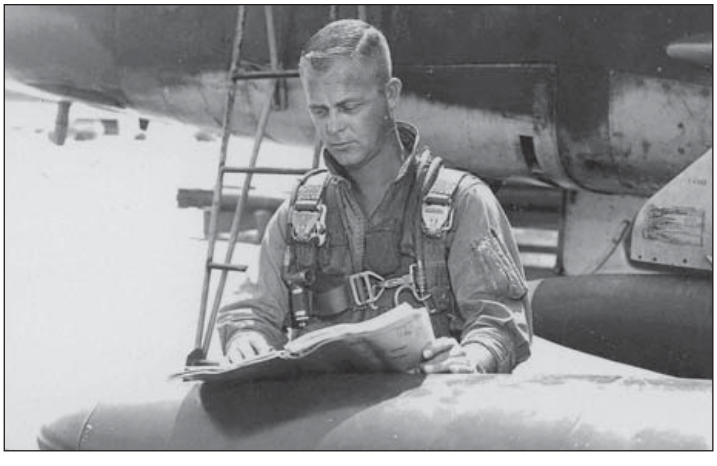
Battle-damage to Jim Icenhour's F-100D-51-NH 55-2901 on the Dak Seang mission on 4 April 1970 was compounded by a jettisoned underwing store when he 'cleaned off' the aircraft a little too fast and it removed a third of the left slab tailplane (*Jim Icenhour*)

120 USAF tactical fighters that enabled the recovery of around 1400 personnel under heavy attack. Their napalm runs were particularly effective in suppressing a torrent of small-arms fire directed at the relief aircraft, Super Sabres diving alongside C-130 and C-123 transports as they made steep landing approaches, strafing enemy gunners beside the runway.

The North Vietnamese policy of attacking outlying US strongholds continued into 1970. The Special Forces camp in the Dak Seang Valley was one such target in April, as Joe Vincent recalled. 'That was quite a little war for several weeks. After a few days of activity there was so much air support for the beleaguered camp that we had to wait our turn to strike, stacked up in a holding pattern. Twice we never made it to the target because we were low on fuel before our turn came up. We had to return to Tuy Hoa and jettison the ordnance in the South China Sea!'

Jim Icenhour flew eight missions to Dak Seang in April, including his first with CBU-12s on 4 April, delivering white phosphorous pellets from an altitude of 200 ft at 500 knots so as to create a smoke-screen that allowed C-7A Caribou transports to drop supplies to the camp in the face of NVA troops, who were only 30 ft from its outer walls. Both he and a C-7A that he was escorting in were hit by ground fire on his second pass. The Caribou crashed, killing its crew, but Jim managed to recover his Super Sabre (55-2901) to Phu Cat.

The demands for CAS caused mission totals to mount rapidly. Maj Dale Shaffer is checking the paperwork on his jet for the 309th TFS's 5000th mission. In addition to his parachute, a pilot had his anti-g suit, survival jacket with beacon, strobe, heliograph mirror, pen-flares, Colt 0.38 pistol, water bottle and as many survival radios and batteries as he could cope with (*via Joe Vincent*)



GUARDSMEN

By 1968 the concentration of US military strength in Southeast Asia left the US Army and Marine Corps with comparatively small reserve forces if further reinforcement should be required. However, the USAF was better placed with numerous Air National Guard (ANG) units ready for war. Eight of these, flying F-100Cs, were mobilised in response to North Korea's seizure of the intelligence ship USS *Pueblo* on 23 January 1968, which threatened to extend the Southeast Asian conflict. Two squadrons, the 127th TFS of the Kansas ANG and the 166th TFS from Columbus, Ohio, went to Kunsan AB, South Korea, on 4 July 1968, and they remained here until 18 June 1969. Earlier, ANG units deployed to South Vietnam had replaced an F-4 squadron that had also been transferred to South Korea, along with three US-based F-4D units, for air defence. The

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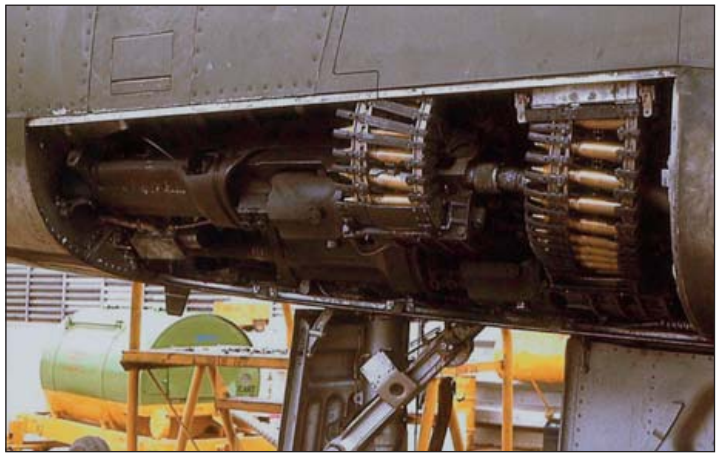
transfer of 'Guardsmen' brought the number of tactical fighter squadrons in South Vietnam to 25.

First to arrive were the F-100Cs of the Colorado ANG's 120th TFS, joining the 35th TFW at Phan Rang AB from 3 May 1968. Within a week they had flown the first of 5095 wartime sorties as the first ANG unit to enter combat since World War 2. Their arrival coincided with frequent VC attacks on the base, and a 35th TFW resident recalled that the newcomers were 'shit scared for the first couple of weeks, specially when we were mortared at night. They ran into the bomb shelters while the rest of us regulars stood outside to watch the mortars hit the flightline'.



The quartet of 20 mm GE/Pontiac M-39 guns was the F-100's basic and, in many contexts, most effective weapon in ground-attack roles. The cannon used an innovative revolver-type cylinder derived from the World War 2 German Mauser MG 213C design. Fed by four ammunition boxes, each with about 200 rounds apiece, the M-39s could each fire 1500 rounds per minute, giving about eight seconds of continuous firing time. Although the weapons were generally reliable, problems could arise from a build-up of gases in the gun bays if the purging doors did not operate, and from occasional jamming of the feed system which would stop all four guns (*Norris via Benolkin*)

The very experienced complement of 21 officers and their large force of 345 enlisted men flew demanding CAS sorties at the rate of 24 per day, and the unit had sustained no losses for almost nine months by the time Capt J E O'Neill was hit by AAA on his third pass in F-100C 54-1973 and had to eject on 29 December. Former *Misty* FAC CO Maj Clyde Seiler was the unit's only F-100 fatality, being shot down (in 54-1897) on 27 March 1969 during a CAS sortie over VC-controlled terrain in circumstances that suggested wing-box failure at a time when the squadron's 'Huns' were passing through the IRAN process to have this area of the airframe strengthened.

The Colorado Guardsmen set an impressive combat record that included the expending of 1.8 million rounds of 20 mm, 423,000 rockets, 14.3 million pounds of bombs and 5.6 million pounds of napalm – all record figures for a unit serving with the 35th TFW. A typical ordnance load-out was two napalm canisters (dropped as a pair) and two 750-lb general purpose bombs inboard. F-100Cs proved to be very accurate bombers, pilots appreciating the aircraft's improved speed, acceleration and handling compared with the later F-100D/F. However, it was 'hotter'

308th TFS pilot Geoff McCarthy steps into the water jet at the end of his tour in 1969. F-100D-21-NA 55-3511 briefly wore a bright red and white colour scheme as part of its flight test duties whilst assigned to the Sacramento Air Materiel Area of Air Force Logistics Command at McClellan AFB, California. In 308th TFS service it was hit by small-arms fire shortly after take-off from Tuy Hoa on 28 December 1969 and Lt Col C W Meyers ejected less than 20 miles from the base *(Bill McDonald)*

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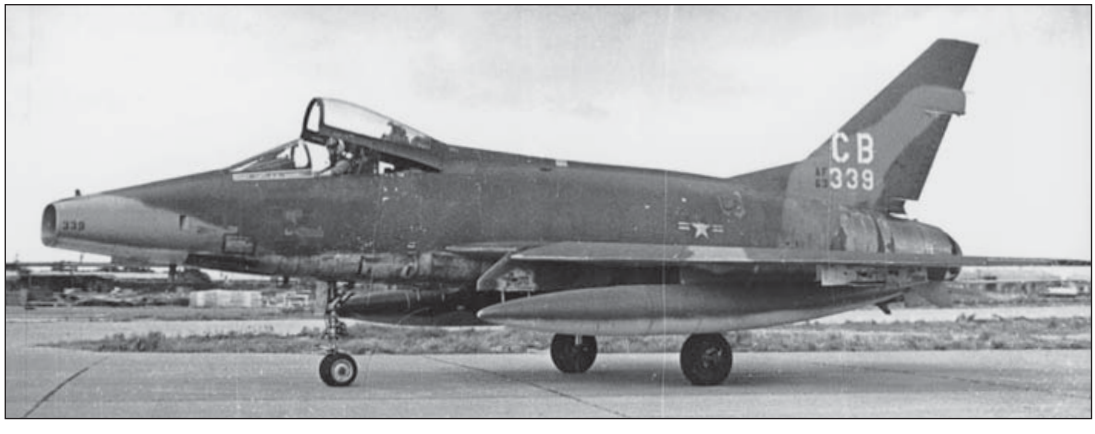
on approach. Even with the speed brake extended, pilots had to hold 183 knots on 'finals', touching down at 155 knots – 20 knots faster than the F-100F.

The Iowa ANG's 174th TFS was next to deploy on 12 May 1968, with a 12,000-mile flight that would have seemed fairly normal (apart from the lack of an autopilot) to the half of the squadron members who were airline pilots. Led by Lt Col Gordon Young, they absorbed a heavy mission schedule, flying 563 sorties by 15 June and 5796 more through to the end of their deployment on 14 May 1969. One of their 'Huns' (54-2004) was the first F-100C loss, on 14 July 1968, and its pilot, 1Lt Warren Brown, was the first of six ANG pilots to be killed in F-100s. Like Capt J T Piner (in 55-3722) of the 612th TFS an hour before him, he was diving on a target near Hue. Both men were making second napalm runs on the same objective when they were downed by a particularly accurate gunner. Brown was at an altitude of only 200 ft when the AAA crippled his F-100C, leaving no chance of ejection. Piner was more fortunate, as a Marine Corps helicopter soon found him.

Two other Sioux City pilots were rescued after their F-100Cs were struck by automatic weapons fire. 1Lt J W Vinapuu was climbing out of Phu Cat on a 27 September mission when his aircraft (53-1765) was hit at 3000 ft, causing engine failure. Ex-*Thunderbirds* F-100C (53-1740) was the 174th TFS's final casualty when it took small-arms hits while bombing a road intersection on 14 March 1969. 1Lt C J Grewell was recovered very close to the target that he had attacked at Dak To.

188th TFS New Mexico ANG F-100C-2-NA 53-1741 carries four M117 bombs and two 335-gallon tanks. Extra sway braces are attached to the inboard pylons (*Steve Smith via Michael Benolkin*)



Well-worn F-100D-91-NA 56-3339 of the 90th TFS taxis in from a mission at Bien Hoa AB (*via Authors*)

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A top view of 188th TFS F-100C-2-NA 53-1741. The jet survived a crash-landing after an emergency at Da Nang on 24 November 1968, only to be hit by AAA on 4 May 1969 during a *Steel Tiger* mission. Capt Michael T Adams was killed, despite ejecting from the aircraft. He was the last of three 'Enchilada Air Force' casualties (*Steve Smith via Michael Benolkin*)

Tuy Hoa AB added two ANG squadrons to its three resident units in 1968. New Mexico's 188th TFS made the long transit flight from Albuquerque, led by Lt Col Fred Fink, in June 1968 with 22 aircraft. This, the first ANG Super Sabre squadron, became one of the most valued tactical fighter units for accuracy in challenging 'troops in contact' ordnance delivery. Most 'Enchilada Air Force' members had more than 1000 hrs of F-100 time, while the maintainers were among the most experienced in the USAF on the aircraft.

Bad weather claimed two pilots on 4 January 1969 when their Super Sabres were diverted to Cam Ranh Bay after a mission, the jets probably colliding as they approached the airfield from the sea. No trace was found of either Maj B G Neeld (in 54-2051) or Capt M S Lane (in 54-2030). Two other F-100Cs were brought down by small-arms fire while diving on VC targets, and one pilot, Capt M T Adams was killed despite an apparently successful ejection from 53-1741 on 4 May 1969.

Also posted to Tuy Hoa during the *Pueblo* crisis from 14 June 1968 were the 22 F-100Cs of New York ANG's 136th TFS, the unit being led by Lt Col Laverne 'Dusty' Donner. Like the other ANG squadrons, its mission was to support 'TIC' – 136th TFS pilots rapidly gained a reputation for accuracy and high availability rates. Although the unit's five losses were the highest for an ANG squadron, its only fatality was Capt Jake Huillier, whose parachute failed to deploy completely after ejection on 25 July 1968. Like the other squadron losses (apart from one due to engine failure), his F-100C (54-1912) was downed by small-arms at low

1Lt Roger Disrud's F-100D-81-NH 56-3392 *Turtle Mountain Express* became a victim of Tuy Hoa's notorious side-winds when it veered off the runway after touch-down and buried its nose in the sand. Nine other F-100s suffered similar fates there, with varying degrees of damage (*via Joe Vincent*)

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The view from the beach at 'Tuy Hoa by the sea' as a pair of 309th TFS F-100Ds pass through 'last chance' checks and armament crewmen pull the pins on their Mk 82 bombs. The AN/ARC-34 UHF antenna seen on the jets' spine and RHAW antenna above the intake were added during phase maintenance from 1967 onwards (*Jerry Key*)

altitude while delivering ordnance or, in the case of 1Lt H W Roberts (in 54-1931) on 18 December 1968, shortly after departing Tuy Hoa.

Squadronmate 1Lt Julius Thurn was the subject of a dramatic rescue by the Duc Lap Special Forces detachment on 23 August 1968 when his F-100C (54-1922) was brought down by automatic weapons fire on his second napalm pass. Noticing his parachute drifting downwards, a Special Forces squad drove a truck out of their camp past the surrounding VC troops and found Thurn, who initially pointed his pistol at them as potential captors. They fought their way back into the camp with him and he grabbed a rifle to help defend the outpost until he could be returned to Tuy Hoa by helicopter.

The ANG units brought a slightly different military culture to the 'Hun' bases. Unlike regular units, there were very few personnel changes and no 'new guys' to train. As 136th TFS pilot Van 'Sky King' Hall recalled, 'We went back to World War 2 stuff – I had my "own" aircraft and my own crew chief. Bernie and I used that F-100C for 95 per cent of the time. We partied hard with the enlisted men – the regulars couldn't do that. We deployed together and stayed together'.

Two more ANG squadrons, the 119th and 121st TFSs of the New Jersey ANG, contributed to the *Pueblo* reinforcements. They combined at Myrtle Beach AFB, Florida, to establish an F-100 Replacement Training Unit and Combat Crew Training squadron to maintain the supply of Super Sabre-qualified pilots. Half of the New Jersey pilots were sent directly to the 355th TFS in South Vietnam.

The departure of the ANG F-100Cs coincided with a reduction of USAF strength in 1969. This cut the 'Hun' force by 66 aircraft to 187 jets in ten squadrons. Bien Hoa's 510th TFS was inactivated on 15 November 1969 and the 90th TFS was scheduled to re-equip with the A-37B the following year. Most of their F-100s were redistributed to other units in South Vietnam.

CAMBODIA

When Bob Wendrock was flying from Phan Rang for a year from April 1968, Cambodia was definitely a 'no-go' area, but he found himself quite unexpectedly at war over that country more than a year before hostilities officially began, and he was awarded a DFC for the mission;

'I was leading a two-ship on a mission to the IV Corps area. This in itself meant that we were limited on fuel for a recovery to Phan Rang since we never had tankers scheduled, except to maintain a proficiency qualification on a couple of occasions. We had delivered all our ordnance

Robert J Wendrock with a 352nd TFS F-100D and the squadron motto, *THE WORLD'S FINEST,* inscribed on his helmet (*R J Wendrock*)

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F-100D-71-NA, 56-3082 belonged to the 612th TFS at Phan Rang AB. Polishing and cleaning the afterburner 'eyelids' was a way of preventing them from sticking in the closed position. Although it was a fairly simple system, the afterburner could give problems, as Dick Garrett recalled. 'Once the afterburner failed to shut off after takeoff and I had a load of four M117 bombs. I pitched the aircraft up and pulled the throttle back until the afterburner cut out, but then the power setting was too low to sustain flying speed. I jettisoned the bomb-load in a controlled jettison area and flew around burning off fuel. Then I started the landing approach, cycling in and out of afterburner and planning an approach-end barrier arrestment, or ejection if it got too hairy. On short final the afterburner started working normally, so I landed and immediately shut it down' (*USAF*)

in the target area and were returning to Phan Rang when we received an emergency call from the controlling agency telling us that there was a downed Army aircraft in the area of the Parrot's Beak. Since we had 20 mm ammunition left we offered our services, although this required recovery at one of the Saigon bases. Upon arrival at the crash site we found that it was in Cambodia, an off-limits area for US aircraft. We saw the Army aircraft on its nose and on fire in a rice field. No controlling agency could contact the crew so we had no idea whether they had survived.

'We made a pass over it and started taking heavy small-arms fire from the associated tree-lines. Since we didn't know where the 'friendlies' were I told my wingman to keep his guns safe and we would do mock low-level strafing runs on those tree-lines to try and draw attention to us and give the crew, if alive, more chance to survive. We made numerous strafing runs until we were critical on fuel and then headed to Bien Hoa. I still remember the coolness of the tower controller when I checked in with two "Huns" on emergency fuel. He very calmly said, "Roger, you are No 4 in the emergency pattern. Report initial". We got down prior to running out of fuel, but it was close. The downed crew was captured but later released, and officially we "never flew" in the no-fly area.'

Operation *Patio* was a programme of air-strikes (in support of the secret Operation *Menu* B-52 strikes) against North Vietnamese troop concentrations and supply depots in Cambodia. F-100Ds hit the first *Patio* target – a column of 125 NVA troops – on 24 April 1970, six 'Huns' dropping CBUs and bombs that killed more than 100 soldiers. A major attack on an NVA truck park near the Kong River on 14 May involved 48 sorties, although the target was obliterated by just 32 fighters. Other missions required F-100s to re-attack target 'boxes' that had already been hit by B-52 *Arc Light* raids. For these, the Super Sabre pilots were told to drop ordnance on territory between the B-52s' bomb craters in the hope of setting off more secondary explosions.

Tactical air power was increasingly concentrated on Cambodia as the monsoon reduced the numbers of transport targets on the Ho Ch Minh Trails and a calmer situation prevailed in South Vietnam. From 6 to 12 May Bien Hoa F-100s were averaging 1.44 sorties per aircraft per day against Cambodian targets. F-4 Phantom IIs were range-limited from operating in lower Cambodia, where the air-strikes were undertaken

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The pilot of this Phan Rang AB F-100D-21-NA performs the required contortions for exiting his aircraft at Phu Cat AB without the aid of the correct Super Sabre boarding ladder in this February 1971 photograph. The 615th TFS had been the first F-100 squadron to fly Vietnam combat missions in 1964 when it was based at Da Nang (*N Taylor*)

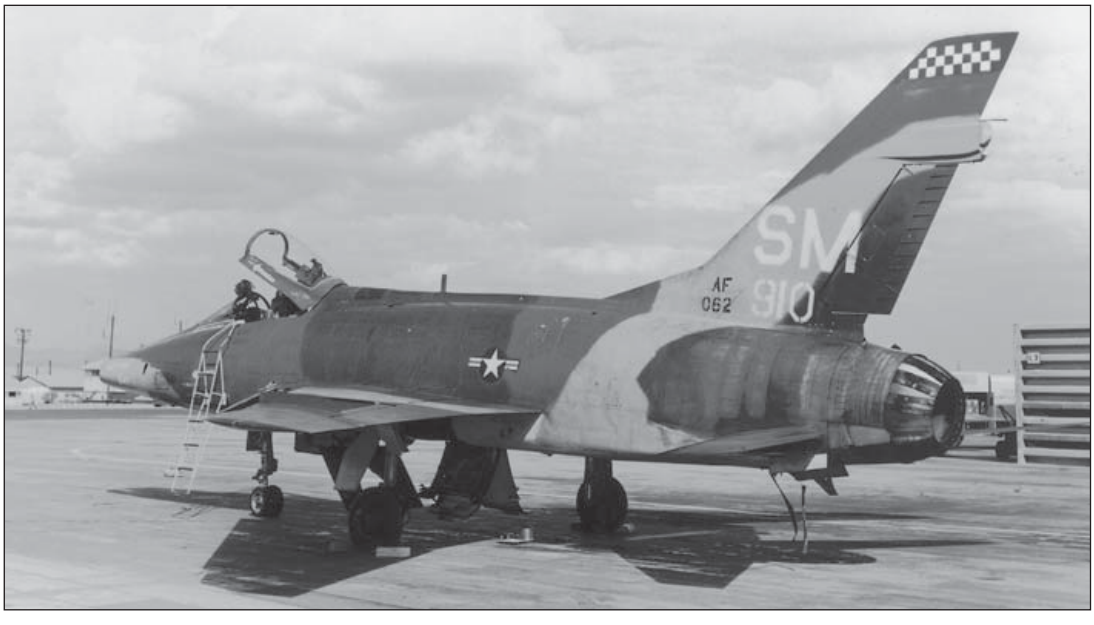
***Jeanne Kay* was a 308th TFS/31st TFW F-100D-61-NA. The fighter's 'SM' codes were applied to aircraft in the unit from 1968. This particular jet departed Tuy Hoa AB for the final time in September 1970. The fin tip chequers were green and white in colour (*N Taylor*)**

by F-100s and A-37Bs (the latter flown by both USAF and VNAF units). Sometimes, pilots were given pre-planned strikes in South Vietnam and then secretly diverted to Cambodian targets in response to ground commanders' needs. However, as Lee Howard explained, the diversions were not all pre-planned. 'More than once I was diverted to Cambodia, but it was for SAR for a downed aircraft, or a firebase being overrun'.

For early missions US Army OH-6 'Loach' helicopters performed the hazardous task of locating and marking targets in small jungle clearings. On 18 May helicopter pilots noticed structures between trees near Se San, marked the target while under fire and enabled two F-100Ds and two F-4Ds to destroy 20 well-concealed bunkers, AAA defences and all the NVA troops at the site.

Lee Howard recalled Cambodia as a 'target rich' environment compared with most of South Vietnam;

'They were tangible targets – large structures, entire villages, trucks, etc. On one mission I remember vividly, we were cleared on a small



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As Bill McDonald explained, 'Towards the end of the summer of 1969, Civil Engineering built a series of mortar-proof hangars at Tuy Hoa, and we moved down into them'. Seen here having its engine started in just such a hangar is F-100D-61-NA 56-2903, the crew chief holding up two fingers to the pilot to signal that the latter should conduct a PC2 check of the secondary hydraulic-driven flight control system. This aircraft was lost on 18 September 1969 on return to base when Capt Larry Leppa of the 308th TFS had a sticking throttle and had to eject (*Bill McDonald*)

village with a pagoda, and the rules of engagement prevented us from striking the latter. After a couple of passes it was obvious that we were being fired upon from the pagoda. I whined about this to the FAC, and he responded, "Negative, Negative! That is NOT a pagoda. I repeat, that is NOT a pagoda. It is a fighting position and you're cleared "hot" on the fighting position". After clearing up the "mistaken identity" we proceeded to destroy the "fighting position", and were credited with same, but were again reminded by the FAC, in giving his BDA, that it was not a pagoda!'

Night missions continued for the F-100 'day fighters' as they had throughout the war. Lee Howard;

'I flew numerous strikes at night, dropping on phosphorous "logs" that had been thrown out of a C-123, Helio Courier or helicopter. We always flew with navigation lights out, and would call in our positions using the names of American cities corresponding to their location in the USA. The bad guys had radios but a very poor grasp of US geography!'

At the end of 1970 the Joint Chiefs of Staff decided to test their policy of 'Vietnamization' (handing the war effort over to the South Vietnamese) by planning a large ARVN thrust into Laos – known as *Lam Son 719* – that was reliant on US air power. When the operation commenced in early February 1971, early sorties by F-100s (under FAC control by OV-10A Bronco pilots in the northern areas, or O-1/O-2s

Tail-codes were introduced in Southeast Asia at the end of 1966, and were well established by 1968. 'CP' was the code allocated to the 531st TFS at Bien Hoa in 1967 until its inactivation in June 1970. F-100D-51-NH 55-2881 spent five years at Bien Hoa from November 1965, moving to Phan Rang in July 1970. Seen here earlier that year, it is flown by 'Ramrods' pilot Oleg Komaritzky with a four–Snakeye warload. The 531st TFS' mascot was an eight-foot python that had the 'run' of the squadron quarters, and was fed on rats (*David Menard Collection*)

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Another 'champagne flight', this time for Lt Col Jim Rodeen, 308th TFS CO. His aircraft, 56-3287, fought on until 30 June 1970, when its loss on a CAS mission was attributed to pilot error (*Bill McDonald*)

Jerry Key with his F-100D before one of his 264 combat missions in the 'Hun'. Postwar, he continued to fly the aircraft with the 188th TFS, remaining current in the F-100C when the unit converted to the A-7D, in which he flew another 3500 hours. 'I ended up with nearly 1500 hours in the F-100C/D and F, but the F-100C was my favourite' (*Jerry Key*)

elsewhere) were frustrated by low cloud, and only B-52s could reach their targets.

By 9 March, after NVA troops had re-taken many positions expensively won by the ARVN, the invading force began to withdraw under even heavier USAF cover. 'Huns', fighting alongside A-7Ds and F-4D/Es, struggled to relieve the South Vietnamese as the enemy used bad weather and darkness to surround and attack them. North Vietnamese tanks pursued the retreating forces and, with better visibility, F-100s were able to respond. Two Super Sabres spotted a pair of T-54 tanks closing on ARVN forces trapped by the Xepon River near Khe Sanh on 22 March. Attacking with 'snake and nape', they disabled both vehicles, but Capt Peter Moriarty's F-100D (56-3180) took numerous 12.5 mm rounds and crashed before he could bail out. Another ten tanks were destroyed later that day.

In all, 8000 tactical fighter sorties were flown between 8 February and 27 March, destroying up to 60 tanks and killing around 3000 enemy troops for the loss of one F-100D and three F-4s. Although it delayed North Vietnam's plans to invade the South, *Lam Son 719* also showed the North how ARVN battalions with poor leadership would be easily overcome as soon as the US air power umbrella was lifted.

This was the last major campaign for the F-100 squadrons, whose fate had been decided as part of Phase IV of President Nixon's draw-down of US forces. Seventh Air Force was allowed to retain two F-4D squadrons, operating from Korat, in Thailand, rather than Phu Cat AB, but in exchange the remaining six F-100 squadrons had to stand down. Combat operations continued into April 1971 over Laos and Cambodia, and so did F-100 losses. The 35th TFW suffered four in April, and seven pilots were killed in nine shoot-downs and one operational accident that year, bringing the total Super Sabre attrition to 242 in 360,283 missions.

Tuy Hoa's 355th and 306th TFSs ended F-100 operations in September 1970, the former transitioning to the A-7D and the latter being inactivated. In October the 308th and 309th TFSs returned to England AFB, where the 4403rd TFW reassigned their 'Huns' to ANG squadrons. At Bien Hoa the 531st TFS had ceased operations by 31 July 1970, followed by the 416th TFS in September and the 90th TFS in October. Phan Rang's 352nd, 614th and 615th TFSs completed F-100 operations by 31 July 1971, as did the 612th TFS Det 1 *Misty* FAC unit.

The last 'Hun' loss of the war occurred in circumstances that typified much of the F-100 pilots' situation in the Vietnam War. On 28 April 1971, 1Lt Ben Lang was returning to Phan Rang after a demanding night attack on a VC strongpoint when, crossing the coast just 20 miles from home, ground fire hit his 615th TFS jet (55-3550) and he was killed in the subsequent crash.

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WILD WEASELS

When 'Leopard' flight of four F-4Cs of the 47th TFS/15th TFW was intercepted by three SA-2 'Guideline' missiles from North Vietnam's 236th SAM Regiment on 24 July 1965, the shockwaves extended far beyond the Phantom IIs' base at Ubon. The fighters were cruising at 23,000 ft on a CAP when the crews saw a smoke trail approaching. Allegedly, they had switched off 'Guard' channel on their radios and missed launch warnings from an RB-66C jamming aircraft, leaving no time to avoid the oncoming Mach 3 missiles. One Phantom II was destroyed (its pilot died after ejection) and the others were badly damaged.

The loss of Gary Powers' U-2C in May 1960 over Russia and a U-2F flown by Maj Rudy Anderson over Cuba in October 1962 were chilling demonstrations of the SA-2's capability, which had caused some observers to predict the end of manned combat aircraft. The USA was well aware of the construction of SA-2 sites around Hanoi in 1965, and four had been photographed by a U-2E on the day 'Leopard' flight was hit. However, apart from equipping Southeast Asia-based 4080th Strategic Reconnaissance Wing U-2Es with ATI System 9B and Sanders System 13A jamming gear, defensive electronic countermeasures and threat warning systems, little had been done to counter this severe threat to US air operations over the North. Conventional tactics recommended low altitude target approaches by strike aircraft as a way of defeating SAMs, although in North Vietnam this placed jets within reach of the entire gamut of AAA weapons. Pilots also soon found that the SA-2's 'Fan Song' control radar could track them at altitudes below 300 ft.

US government advisors said that the Russians had installed the missiles to appease the North Vietnamese but would never use them against American aircraft. The 'Leopard' incident reversed this policy, and attacks on the sites began with *Spring High* on 27 July, when 48 Thunderchiefs attacked two SAM batteries. The attack cost six F-105s, caught in flak traps at sites that had already been evacuated, probably after a tip-off from a spy at Seventh Air Force HQ in Saigon. It was a timely warning of future Soviet and North Vietnamese tactics.

While Soviet technicians completed a ring of 56 SAM sites to protect Hanoi and Haiphong, the USAF urgently set up a task force led by Brig Gen K C Dempster on 13 August, a few months after turning down a Bendix SAM warning system for the F-100F as being unnecessary. In fact the USAF had tested a QRC-253-2 system in the F-100F during 1964. Its brief was to devise ways of applying known anti-SAM ECM technology to aircraft that could be used to detect and destroy those sites.

For a mere $80,000 the USAF, under Dempster's direction, ordered from Applied Technologies in Palo Alto, California, two Vector IV warning receivers and IR-133 panoramic receivers, with initial delivery by 28 September 1965 – less than month from the date of the order. Vector IV (later AN/APR-25), selected from 200 other proposals,

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provided a 360 degree warning of 'Fan Song' threats and covered C-, S- and X-band radar signals, displaying the direction and strength of the threat as strobe indications on a three-inch azimuth warning CRT scope. A long strobe line showed the threat was close and imminent, while a short one showed that the aircraft was not being immediately targeted by a SAM site or radar-directed AAA battery. The system could distinguish between S-band threats from SAMs, AAA and radar-equipped interceptors, but if the threats were simultaneous it could only differentiate them after a SAM was fired.

The IR-133, still under development and operated separately, analysed the threat signals via three extra antennas and gave a more detailed picture of their origin. By monitoring audio signals in his headset and comparing the strength of signal 'spikes' on each side of the aircraft, an operator could help to steer it towards a threat, although none of the devices could show an exact distance from the SAM. A third unit, the WR-300 tuned crystal receiver, could monitor the SA-2/Fan Song L-band guidance and control emissions. It illuminated a large red light (the famous 'Oh shit' light) in the cockpit if it detected radar in high PRF (Pulse Repetition Frequency) mode, indicating an imminent missile launch. This unit was developed in only 40 days, and it subsequently evolved into the widely-used AN/APR-26 launch warning device.

Both AN/APR-25 and IR-133 were already relatively established in operational usage, but the secrecy surrounding the former's installation in CIA-owned U-2s meant that few USAF personnel were aware of their existence prior to the *Wild Weasel* project. It also meant that reliable kit was available for the *Wild Weasel* installation at short notice.

Dempster's committee chose F-100F-20-NAs from the serial batch 58-1205 to 58-1233 as the vehicles for the operational testing of this set-up. Two-seat Super Sabres were readily available (unlike two-seat F-105Fs), and the airframe could accommodate the 'Modification 1778' equipment and its wiring (unlike the F-4C Phantom II) and a rear cockpit for the electronic warfare officer (EWO) to operate the system and look out for sites and missiles. Vector IV came in five small, grey-painted units that required substantial electrical power and the accurate placing of antennas on the aircraft in order to cover the widest possible 'vision' of potential threats.

The installation was completed by a particularly dedicated team of technicians working around the clock, supervised by Kay Bullock from NAA. They used space vacated by removing the F-100Fs' PC-212 Doppler navigation systems and AN/ASN-7 navigation computers. The IR-133 unit was located in the rear cockpit only, while the other components had repeater units in both cockpits. The first of four aircraft borrowed from the 27th TFW was ready within ten days.

The F-100F's role was to detect threat sites so that they could be attacked by strike aircraft, rather than jamming their emissions for self-protection. A series of QRC wing-mounted jamming pods were later made available for F-105s and F-4s, but the F-100F lacked pylon space to carry them. They would in any case have interfered with the Vector system's signal inputs and given only limited protection to a single aircraft, rather than a 'pod' of four jets flying in an optimum formation to combine their jamming power.

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F-100F-21-NA 58-1221 was the first *Wild Weasel* conversion and the second of the initial batch of jets to be lost when it sustained engine failure on 13 March 1966 over Thailand. Antennas for the *Weasel* mission were the AN/APR-25/26 beneath the nose, a DF antenna on the tail fairing, IR-133C on the fuselage sides below the cockpit and the WR-300 blade antenna ahead of the nose-gear bay (*USAF*)

It therefore became obvious that the SAM-hunting Super Sabres and their accompanying F-105Ds were going to have to fly ahead of strike formations over some of the most heavily defended targets in military history, deliberately luring SAM sites into locking them up on radar and firing at them. Their only 'weapons' were a KA-60 panoramic camera to photograph suspected sites and a small tape recorder to provide evidence of audio signals for post-mission analysis by the 'boffins'. LAU-3 rocket pods were to be carried for target marking, although they could also do some damage if required, as could the F-100F's two 20 mm cannons. The real destruction, however, was left to the three F-105D Thunderchiefs with bombs and more rockets that comprised the rest of the SAM hunting flight.

Early pilots could have been forgiven for regarding the role with extreme scepticism, although the commander of the operational test-flight group, Lt Col James Kropnik was quickly removed when he voiced his doubts too obviously. Another pilot was sacked for telling a local girl that he was engaged in classified Vietnam-related work. The project was top secret, even to the extent of avoiding an 'EF-100F' designation for the converted Super Sabres.

Project *Mongoose* (soon changed to *Wild Weasel I*) proceeded rapidly, while ATI experimented with the installation of similar equipment in the F-105D, RF-101C and RF-4C. Four F-100Fs were converted in record time at Long Beach International Airport and delivered to Eglin AFB in September 1965 for evaluation and crew training with the Tactical Air Warfare Center after the first flight on 16 September. Initially, five volunteer pilots were drawn from other F-100 units while the first EWOs came from SAC B-52 or TAC RB-66 squadrons. Maj Garry A Willard replaced Lt Col Kropnik, and his crews were paired up as teams – a vital part of all subsequent *Wild Weasel* operations.

Capt Allen Lamb, one of the pioneer crews, observed that 'There was no training to speak of. It was "cut and paste" to see if it would work. We did a run against the SADS-1 and -2 'Fan Song' simulators at Eglin to check the accuracy of the equipment. Then we went to war to see if it would really work'.

Capt Ed Sandelius was the former RB-66C EWO in the group;

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Capts Ed White and Ed Sandelius with F-100F-21-NA 58-1226, the second *Wild Weasel*, at Korat RTAFB. Ed White received his orders to 'participate in Project *Wild Weasel*' on 22 October 1965 while he was with the 615th TFS at England AFB. By 1 December he and Ed Sandelius were flying the first *Wild Weasel* sortie from Korat RTAFB with Maj Garry Willard and Capt Lifsey (*Ed Sandelius*)

'EWOs would fly scheduled missions with their selected pilots and then at the debriefing they would share their experiences and techniques amongst the other crew-members and Eglin staff that were responsible for putting together the tactics we would use in Southeast Asia'.

The combination of fighter pilots with their more sedate colleagues from B-52s took some adjustment. It was Allen Lamb's older ex-B-52 EWO Capt Jack Donovan whose initial reaction was, 'You want me to ride in the back seat of a two-seat fighter with a teenage killer in the front seat? You gotta be shittin' me!', though Ed Sandelius recalled that this was Jack's standard response to most things. It certainly gave rise to the *Wild Weasels'* traditional motto, 'YGBSM', that has often appeared in their insignia.

After a pre-deployment briefing attended by Col Robin Olds from Ubon RTAFB, the four F-100Fs and their crews departed for Korat RTAFB on 21 November, still in great secrecy and 'disguised' in a 421st TFS F-105D 'transpac' deployment to the base. At Korat they became the 6234th TFW *Wild Weasel* Detachment under the control of the 388th TFW. As the only F-100Fs on an F-105 base, they drew some attention to themselves, but crews could not reveal their purpose.

Eight 334th TFS Thunderchiefs from Takhli RTAFB had carried out the first successful attack on a SAM site, led by a RHAW-equipped US Navy A-4E *Iron Hand* Skyhawk from VA-164, on 31 October, but the first anti-SAM operation led by a USAF *Wild Weasel* was flown by a pair of F-100Fs on 1 December, with two missions daily thereafter. On that first mission Capts Ed White and Ed Sandelius homed on to a 'Fan Song' and fired their LAU-3 rocket pods at the apparent source of the transmissions before the F-105s took over. The Vector equipment worked as advertised, showing them the site's location as they overflew it. Ed White eventually became the only pilot to have checked out in the F-100F, F-105F and F-4C *Wild Weasels*.

It was a period of acclimatisation in which crews learned that 'Fan Song' operators turned off their transmitters or switched them to 'dummy load' stand-by ahead of a strike package's arrival. It was also clear that the SAM batteries were more mobile than expected, often negating the photo-intelligence provided to the detachment. Ed Sandelius recalled 'With the ability of the SAM units to pick up and move at short notice, we had to rely on our own equipment'. They were restricted to daylight sorties. 'Without radar none of the F-100F missions were flown at night. The F-105s had terrain avoidance radar, but they only flew the day missions since they wanted to be able to see missile launches'.

One of those missions was a Thunderchief attack near Kep airfield on 20 December, which was led by Capts John Pitchford and Bob Trier

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in F-100F 58-1231. A second section of eight F-105Ds followed, with Maj Bob Schwartz and Capt Jack Donovan in lead position. Tied to the strike packages rather than hunting ahead of them as an *Iron Hand* flight as the *Weasels* preferred, the F-100F crews had to approach the target over heavy cloud. They picked up signals from a 'Firecan' AAA-directing radar moments before their aircraft was hit by the gun battery. They almost reached the coast before their blazing jet's hydraulics gave out. Pitchford's arm was dislocated as he ejected and he was shot three times in the other arm by militia just after he landed by parachute and was taken prisoner. Bob Trier, a pistol expert, was allegedly killed for attempting to resist capture. The *Weasels* flew no more missions within strike flights, and they were allowed to pursue their freer *Iron Hand* approach.

This reversion to earlier tactics yielded results two days later when Allen Lamb and Jack Donovan led 'Spruce' flight in F-100F 58-1226 (later a *Misty* F-100F) with four F-105Ds on a *Rolling Thunder* attack on the Yen Bai railyard. Jack Donovan picked up 'Fan Song' emissions 100 miles from the target;

'I kept the SAM site at around "ten o'clock" so he wouldn't get the idea I was going after him. When I could, I dropped into shallow valleys to mask our approach. Now and again I'd pop up for Jack to get a "cut". After breaking out of the Red River Valley I followed the strobes on the Vector IV and turned, keeping the river alongside us. At this point the IR-133 strobes started "curling off" at "12 o'clock", both to the right and left of the CRT, and I knew we were right on top of the site. I started climbing for altitude and Jack kept calling out SAM positions literally left and right. My rockets hit short, but as I pulled off the target there was a bright flash.'

Donovan had apparently hit one of the SA-2's rocket fuel tankers. Two F-105Ds followed up with 2.75-in rockets, shredding the SA-2 support vehicles, while Lamb came back for a strafing run that put the 'Fan Song' unit permanently off the air.

The flight expended its remaining ordnance on the AAA defences, and the site itself, which Donovan had noticed 'was covered up to look like part of a village', was reduced to smoking junk as the fighters made pass after pass. When a second site came 'up' and started looking for them, they had no ordnance left so Donovan and Lamb egressed flat out, using a low range of hills for cover. All six crews were awarded the DFC for this outstandingly successful mission, although the *Wild Weasels'* role in the mission could not be made public. Allen Lamb was credited with two more sites in his extended six-month TDY and Jack Donovan returned

Capts Allen Lamb and Jack Donovan step out for another *Wild Weasel* mission at Korat RTAFB in December 1965 (*Allen Lamb*)

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to the USA after another dozen missions to help establish a *Wild Weasel* School at Nellis AFB.

Capt Lamb's second site was destroyed in February 1966 on a mission led by F-105 pilot Maj Bob Krone. His new EWO, Capt Rick Morgan, picked up a 'Fan Song' signal as the flight was heading home, short of fuel. They saw the site just ahead of them and the flight took it out with one pass each. Capt Lamb's third successful attack occurred on 4 March 1966 when a *Weasel* flight struck a site 17 miles from Hanoi. A full complement of rockets and napalm failed to silence the SAM battery, which was threatening a SAR attempt. Capt Lamb made a final, decisive, pass in which he fired out his 20 mm ammunition into the 'Fan Song' van, which he later learned housed several Soviet technical advisors.

In their frequent duels with SA-2 sites the *Wild Weasel* crews developed tactics that were subsequently used by all tactical aircraft faced with this threat. An important one was their evasion tactic, consisting of a sharp diving turn into the missile's flightpath and a high-g break at the last possible moment before it could make a course correction. This required considerable skill and nerve, but it saved many lives.

Part of Brig Gen Dempster's brief had been to develop an anti-radiation missile that could be carried by fighters. After the completion of the Southeast Asian evaluation of *Wild Weasel I* on 23 February 1966, the surviving F-100Fs remained operational at Takhli. They had been joined by three extra Super Sabres with additional equipment for launching the AGM-45 Shrike missile, which was cleared for use on the aircraft in March 1966. This 10-ft, 400-lb missile originated in a US Navy programme in 1958, and it was designed to home onto the emissions from a 'Fan Song' radar. It had entered US Navy service in 1965 on A-6 Intruders and A-4 Skyhawks in the *Iron Hand* role. Use of the missile on F-100Fs was mainly development work for its later, far more extensive use on the F-105F *Wild Weasel III*. The *Weasel* F-100F simply lined up the missile visually on the site until its seeker locked on to the 'Fan Song' signal. The pilot then pulled up to 'loft' the missile, within its ten-mile range, towards the radar site.

Shrike was limited by its seeker head, which had to be pre-tuned to a specific radar frequency, whereas Soviet radars could operate within a range of options. If it did score a hit, the damage caused by its small warhead was confined mainly to the 'Fan Song's' replaceable radar dish antenna. Most importantly, the missile immediately lost 'lock' and went ballistic if the radar it was aimed at closed down. The weapon was, therefore, primarily employed by F-100F and later F-105F *Wild Weasel* crews to intimidate radar operators into ceasing transmission, thereby reducing the threat to the US strike force.

Korat received its first Shrikes in March 1966, and the first operational firing was carried out by Maj Don Frazier and his EWO, Marshall Goldberg, on 18 April. The missile disappeared into the haze over the site with indeterminate results, and a second firing also produced no visible hit. With only around ten weeks of operational time remaining, the detachment could only make limited use of the missile.

Wild Weasel I trials also experimented with CBUs and BLU-27/B napalm (for target marking) against SAM sites in February 1966, with partial success. CBUs were later used very effectively by F-105F *Weasels*,

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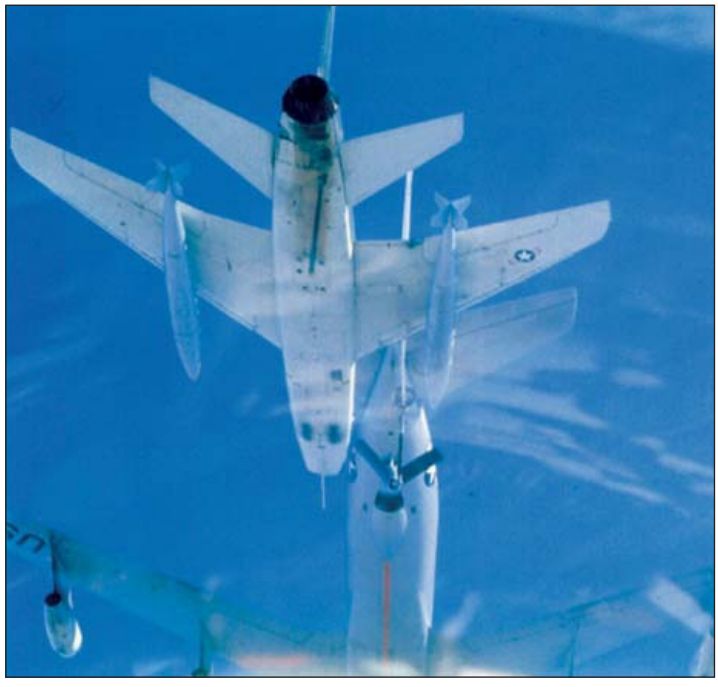
but napalm tended to obscure the area with smoke without causing much damage to 'hard' targets. Work on the definitive F-105F was progressing well at Eglin AFB, and *Wild Weasel I* had paved the way for the new phase of operations. On 8 January 1966 Brig Gen Dempster and the Air Staff had selected the F-model Thunderchief as the next *Wild Weasel*.

Although it had operated well with F-105s, the fact that the Super Sabre's cruising speed was 100+ mph slower than the Thunderchief had proven to be a major handicap. F-100F pilots had to over-use afterburner in order to keep up with the strike force and to perform any kind of manoeuvring, running them low of fuel and causing excessive engine wear and scorching of the RHAW system's internal co-axial cables in the rear fuselage. Thunderchief pilots also hated sharing a probe and drogue tanker with the F-100Fs, much preferring their alternative boom refuelling to the problematic nose-mounted probe on their 'Thuds'. Also, the F-100Fs' hastily-installed electronics were showing signs of fatigue.



A *Wild Weasel* F-100F takes on fuel from a probe-and-drogue configured KC-135A. North Vietnamese SAM site camouflage was often so effective that its components could not be seen from an F-100F (even when its Vector equipment showed a site had been over-flown) until SA-2 missiles were fired, creating visible smoke and dust clouds (*Ed Sandelius*)

Although the first five *Weasel* F-105Fs arrived at Korat on 22 May 1966 and began operational missions in June, *Wild Weasel I* continued to fly sorties until 11 July, when Thunderchief crews reached combat readiness. There was plenty of work for F-100F crews to do during this period, including flying 'pathfinder' training missions for F-105F crews and participating in Operation *Gate Guard*. The latter was one of many attempts to block the trails network, but it was threatened by the increase in radar-directed AAA and SA-2 emplacements in Route Package (RP) 1, requiring the presence of *Iron Hand* F-100Fs and EB-66 jammers.

Despite the extremely hazardous nature of their assignment only three F-100Fs were lost, including one (58-1221) due to engine failure during a 13 March 1966 training sortie. The final combat shoot-down, like the first, also involved the loss of the crew. Maj Clyde 'Heavy' Dawson (the detachment CO) and Capt Don Clark were hit by AAA (in 58-1212) while attacking a SAM site on an *Iron Hand* mission near Vinh on 23 March 1966. Maj Dawson was replaced by Don 'Buns' Frazier, who completed 48 *Weasel* missions before flying one of the four surviving aircraft home for a much-needed makeover.

The 6234th TFW *Wild Weasel* Det had achieved much during its eight-month deployment. With only three or four operational aircraft on most days, the unit was credited with nine SAM sites destroyed. Perhaps more importantly it had regularly forced many others to close down to avoid the risk of detection and attack, thereby protecting numerous strike packages from radar-directed SAMs and AAA.

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MISTY FAC

USAF plans required the phase-out of the F-100 from frontline units by 1970, but it was during its final years of wartime service that the 'Hun' performed one of its most valuable tasks. The area to the North of the Demilitarized Zone (DMZ) known as 'Tally Ho' had become too hazardous for light, slow FAC aircraft by 1967 – some 282 O-1 and O-2 aircraft were shot down during the war and 177 pilots killed, most from early 1967 onwards. The increasing numbers of SA-2 SAMs and AAA batteries along the Ho Chi Minh trails also put strike aircraft and *Arc Light* B-52s at risk. When the USSR began to supply SA-7 'Strela' man-portable SAMs to the NVA, the position of propeller-driven FAC and RESCAP aircraft worsened considerably. It was the loss of O-1E 51-12102 and its pilot, Lt Col Lester Holmes, to an SA-2 near the DMZ on 22 May 1967 that hastened the Fast FAC programme.

A faster FAC aircraft was needed to reduce exposure to ground fire, and the F-100F offered both speed and a back seat with good visibility for an airborne observer. Although its fairly limited 'dry' thrust meant that afterburner was needed to maintain speed when avoiding AAA sites while on reconnaissance sorties, or pulling up sharply after a marker-rocket shot, the 'Hun' could arrive over a target or RESCAP area far quicker than the 100 mph O-1, and offer around five hours of cover using in-flight refuelling. However, the task remained very hazardous. Of the 157 pilots who flew these Fast FAC missions 34 were shot down.

In 1967 one of the Fast FAC (*Misty*) flyers' roles was to curtail the flow of supplies south on the Ho Chi Minh trails network in Laos and North Vietnam. RP 1, the most southerly part of North Vietnam, was already the most heavily bombed area of the North, but supplies

612th TFS *Misty* F-100F-21-NA 58-1222 bears the ironic nickname *THE PROTESTER'S PROTECTOR*, a tag that later appeared on a *Wild Weasel* F-105F. It is seen here firing a 2.75-in white phosphorous marker rocket (*USAF via Norman Taylor*)

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continued to pass through at an increasing rate and the defences to protect them were also being considerably strengthened. The Fast FAC's experienced eyes were needed to identify targets such as vehicles, POL and arms supply dumps, occasional trains and bridges for attack by strike aircraft that he could call in via the Hillsborough airborne battlefield command and control centre (ABCCC) aircraft.

All Fast FAC pilots were required to have flown at least 100 combat missions and 1000 hours, though most had far more. During assignment to the *Misty* unit crews flew around 50 missions over a four-month period before being rested, this short tour time being dictated by the element of high risk associated with being a Fast FAC – losses were four times greater than those of other Super Sabre units.

Aircraft were drawn from the dwindling inventory of F-100Fs at all the local F-100 bases, and after an initial period at Phan Rang in May 1967, seven jets were concentrated at Phu Cat from 15 June 1967 as Det 1 of the 612th TFS. Aircrew served with the det on four-month secondments from other units, flying F-100Fs borrowed mainly from the 416th TFS – the latter also supplied the unit's buildings and facilities. Its small numbers were a handicap for the rest of the war as Joe Vincent recalled;

'The F-100Fs got shot down a lot while flying *Misty*. The USAF had to ferry five more in from Luke AFB in late 1969. If both of the F-100Fs from one squadron were lost while flying *Misty* a shuffling of jets would take place. Even though F-100Fs were assigned to each of the five 31st TFW squadrons, *Misty* drew them in the main from the 416th TFS. The two-seaters were also on call for other squadron duties such as check flights for new aircrew.'

Despite the comparatively high loss rate for *Misty* crews, there was competition to be a Fast FAC. 'I don't remember them ever having any trouble getting volunteers', explained Bob Wendrock. 'Fighter pilots in general are of a mindset that they want to fly the most demanding missions, and *Misty* missions were perceived to be the most demanding'.

Crews worked as a team, usually flying with the same partner, and for the first year back-seaters could seek an 'upgrade' to the front seat, or simply swap seats with the pilot for some missions.

The unit's comparative freedom of action was opposed by more conventionally minded USAF senior officers like Col Ed Schneider, who led the parent 37th TFW. He felt that the *Misty* operation put his crews and aircraft at too great a risk. However, the programme had the support of Gen William 'Spike' Momyer, a distinguished World War 2 fighter ace, former CO of the F-100D-equipped 312th FBW, Seventh Air Force commander (until 1968) and probably the fighter community's most sympathetic voice in the Saigon command structure. His director of combat tactics, Maj Jim Chestnut, had written the paper that first advocated the Fast FAC concept as a way of improving the results of strike missions, although his first preference for the job was the RF-4C.

Under the official designation Operation *Commando Sabre*, the unit was formed with 16 volunteer pilots, including four O-1 FACs, at Phu Cat (the closest F-100 base to North Vietnam) in July 1967. Col Ray Lee, 37th TFW vice-commander decided that it required its own commander and facilities. The Seventh Air Force director of operations appointed Maj George 'Bud' Day, a dynamic leader who served as a US Marine Corps

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gunner during World War 2, an F-84 Thunderjet pilot in Korea and with the 55th FBS at RAF Wethersfield from 1955 flying the F-84F Thunderstreak. There, he survived an incredible bail-out from a notoriously unreliable F-84F (nicknamed *Atom Bum*) when its engine disintegrated on approach. Ejecting below 300 ft with the jet rolling inverted, Day fell through trees as his parachute failed to deploy and emerged with only a broken ankle – he was the first jet pilot to survive a 'parachute-less' ejection. Having transitioned with the 20th TFW to the F-100D, Day joined the 309th TFS at Tuy Hoa in April 1967 with more than 5000 hours in his log book. On 25 June 1967 he was made CO of Det 1, 416th TFS, despite telling the director of operations that he thought using F-100Fs as FAC aircraft was 'a very bad idea'.

Overriding these early misgivings 'Bud' Day applied himself fully to the task of devising tactics for the new, secret operation, and he had Det 1 operational two weeks later. In the search for an appropriate call-sign for the *Commando Sabre* sorties, 'Bud' remembered a song he had liked in a Las Vegas nightclub in 1958. Johnny Mathis' 'Misty' provided the squadron's sentimental, but highly respected, label.

Like the *Wild Weasel* F-100 crews, the F-100F 'Fast FACs' developed their own tactics and schedules, operating mostly as pairs under the same supervision arrangements as other FACs. They were allowed considerable freedom (compared with other Super Sabre missions) to conduct reconnaissance in areas of their choice, seeking out targets for air strikes. FAC aircraft traditionally carried no ordnance apart from smoke rockets to mark targets, and the F-100Fs adhered to this, although their two cannon with 400 rounds of 20 mm were sometimes used to deter potential captors in a RESCAP situation. Sometimes, the white phosphorous ('Willie Pete') rockets produced surprising results. When early *Misty* pilot Capt Chuck Turner fired one to mark a supply barge for an F-4 strike, the rocket triggered a massive explosion that destroyed the barge. Maj Robert Blocher marked a SAM target for other fighters, and his 'Willie Pete' rocket hit an SA-2 in the tail, causing it to launch ballistically.

Arrival times over the target area were staggered by an hour so that one of the pair could refuel in flight while the other continued to direct the strike or search mission. Operations began on 28 June 1967, with 82 missions controlling 126 strikes by F-4s and F-105s logged by the end of July. Two missions a day were standard, giving up to eight hours of FAC coverage of the 'Tally Ho' area, where a limited USAF O-2 *Covey* FAC contingent also flew. Although such heavy usage of the small F-100F force increased maintenance requirements, the benefits were immediate, as eagle-eyed back-seaters began to identify far more targets than single-seat pilots on armed reconnaissance missions. The *Misty* information also tended to be more reliable than data gleaned from the vastly expensive *Igloo White* sensor-based monitoring system.

'Fast FACs' quickly became expert at detecting the slight colour changes in the forest that could indicate a camouflaged truck-park or gun. Clues such as patches of dust on treetops could indicate that a convoy was hiding beneath the forest cover. They also learned to spot recent tyre tracks, camp fires or other signs of activity by drivers on the trails – the PR-11 transporter/erector vehicles used for SAM sites left distinctive tyre track patterns when they set up SA-2 missile launchers.

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This F-100D flew with the 416th TFS from Tan Son Nhut, Bien Hoa, Phu Cat and Tuy Hoa ABs during its five years in Vietnam (*David Menard*)

Col Leroy J Manor prepares to take *Misty* F-100F-11-NA 56-3674 aloft with Col Malcolm S Horton in the rear seat in 1968. Col Manor succeeded Col Ed Schneider as 37th TFW CO in May 1968, and gave the *Misty* operation much greater support. He later commanded the Son Tay rescue effort, retiring as a three-star general (*Norman Taylor*)

Although *Misty* back-seaters were usually seconded from F-100 single-seat assignments, and initially resented being flown by another pilot, they were soon acknowledged to be the key component in the team. The mission required them to guide the front-seater, using the composite 'mosaic' maps they had prepared themselves. They had to look out for the slight indications of possible targets, plot them and, if possible, photograph them in monochrome or colour with a Canon or Pentax 'Spotmatic' 35 mm camera, although their manually-operated light meters did not respond well under 2-3g cockpit conditions as pilots continually dived, turned and climbed to defeat AAA gunners.

Spotting gun emplacements before they could fire was often too hard to accomplish at around 450 knots. Of the smaller calibre weapons 0.50 machine guns could cause real damage at altitudes up to 1500 ft, while 14.5 mm ZPU-2/4 mobile guns, each with two or four barrels, were effective up to 4000 ft. These weapons were often encountered in great numbers in coastal areas.

For the *Misty* crews over RP 1, their principal adversary was the 37 mm gun, large numbers of which were emplaced in groups of up to six. These were a lethal up to about 8000 ft. At higher altitudes up to 13,000 ft, 57 mm batteries, often guided by a 'Firecan' radar, were hazardous, and their presence often

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indicated an important potential target. The North Vietnamese were so skilled at camouflaging their gun batteries that they were seldom visible unless a *Misty* could lure them into firing. He would then plot the position and often call in an airstrike. Requests for QRC-160-1 ECM pods to protect the F-100Fs from radar-directed SAMs and AAA were turned down due to their limited numbers, and their lack of jamming effectiveness when hung on the inboard pylons. *Misty* F-100Fs usually flew without the in-built RHAW equipment that was progressively fitted to the F-100Ds. CBUs were made more available for flak suppression but *Misty* ordnance usually consisted only of rocket pods and drop tanks.

The principal defences against AAA were speed and continuous manoeuvring or 'jinking', a tiring process for the pilot and extremely uncomfortable for the rear-seater. Even so, they were fired at almost continuously on most missions, and AAA damage was almost routine. The seven original aircraft held up well though, with no 'aborts' for mechanical problems in their first five months.

'Bud' Day led by example, devising with his operations officer, Maj Bill Douglass, the 'rule-book' for *Misty* operations, and flying missions virtually every day to learn more. Most of his pilots worked for up to 18 hours a day, taking off on their first missions before dawn. Briefings usually began more than two hours before take-off, and debriefings could extend the day by three or more hours as there was usually much to report and analyse. *Misty* flights soon became the major source of information on enemy activity in RP 1 as the pilots took 'ownership' of the area. One crew flew 85 hrs in a three-week period as Det 1 tried to keep the area under almost constant surveillance. With a pair of *Mistys* on the mission, one would spend 30+ minutes over the North seeking targets while the other jet refuelled. They would then swap, making three or four target searches and refuellings each during a 4-5 hour mission.

One of 'Bud' Day's August 1967 missions was a perfect demonstration of his skill, and the effectiveness of *Misty*. Noticing a discontinuity in the jungle terrain, he focused on one small patch of ground and spotted camouflaged roads and a small truck emerging from the trees. Approaching the vehicle head-on, 'in the weeds', he fired a marker rocket that blew it up. Day then called in a flight of F-105Ds, but also made

F-100F-21-NA 58-1232 spent most of its time with the 510th TFS attached to the 405th FW, then the 27th TFW and, finally, the 35th TFW. Seen here at Phan Rang in 352nd TFW markings, the jet was actually being flown by the Colorado ANG's 120th TFS at this time – note the unit's wildcat insignia on the tail. 58-1232 remained with the 120th upon its return to the USA, transferring to the South Dakota ANG's 175th TFS for the final phase of its career (*Norman Taylor*)

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a second pass over the suspect area, firing another rocket into the trees. His instinct had been correct. The rocket set off 28 large secondary explosions that blew the camouflage netting off a truck park and a SAM site, providing plenty more targets for the F-105Ds.

Det 1 relied mostly on airborne intelligence from its own pilots, rather than waiting for the often inadequate and outdated information from official sources. Crews made their own 'intel' packs of maps and photos from their own cameras and Seventh Air Force resources so that they had a complete, constantly updated picture of RP 1's terrain and trails network to help pinpoint their targets.

Sadly, 'Bud' Day's *Misty* leadership was cut short on 26 August 1967. Flying his 139th mission in F-100F 56-3954, which was noted for its slack rear-seat harness and consequently uncomfortable ride when jinking, he was checking out Capt Corwin Kippenham on his first FAC sortie when he received last minute instructions to locate a SAM site near Thon Cam Son. Approaching the suspected target very low at almost 500 knots, they attracted unusually heavy AAA, but Day thought he spotted an SA-2 launcher. Having refuelled from a *Blue Anchor* tanker , Kippenham and Day returned on a different heading for another look.

At around 550 knots and 1000 ft they met another curtain of 37 mm AAA, and their F-100F took a serious hit in the rear fuselage just as Day sighted the SA-2 launchers. They lit the afterburner and pulled hard to try and gain height, as they were only ten miles from the coast, but the Super Sabre's hydraulics had been fatally damaged and at only 3000 ft it became uncontrollable. Kippenham was recovered by an HH-3E after the inevitable ejection, but Maj Day, unconscious with a broken arm, dislocated knee and swollen left eye, was captured by local villagers. His last view of freedom was the HH-3E, with Kippenham in its doorway, searching for him until a storm of small-arms fire forced it to retreat.

Despite his injuries Day escaped, remaining free for two weeks while he struggled to reach South Vietnam. Tragically, he was re-captured by a VC patrol just after crossing the border and incarcerated in Hanoi until 14 March 1973. For his heroic escape and subsequent example of leadership and resistance during a period of appalling torture and neglect during captivity, Day was awarded the Medal of Honor.

'Bud' Day's loss was a severe set-back for the young *Misty* operation. However, he had established the successful tactics that achieved the results that were needed at a particularly low point in the air war. Detection and destruction of targets in RP 1 had improved dramatically even in the first month of *Misty* flights, and American bombers were at last doing real damage to the covert southbound flow of supplies from North Vietnam, although this seemed to cause a redoubling of the enemy's effort. Maj P J White took over command and continued Day's example of leadership of the 16-pilot force by example. *Misty's* brief expanded to include FAC duties for US Navy strikes on coastal artillery and 'spotting' for naval gunfire from off-shore battleships.

As solo aircraft, they could often find their way beneath low cloud-base conditions and see large convoys moving on the trails, but they knew that strike aircraft would be unable to see and hit these vital targets. The North Vietnamese also capitalised on the immunity provided by any Washington-imposed bombing pauses, and they hugely increased their

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traffic flow by day and night. Again, *Misty* crews could only watch with increasing frustration, and occasionally do a little off-limits strafing. Most worryingly, they began to see armoured vehicles joining the southward flow towards US outposts such as Khe Sanh, although it took a while to convince Saigon of this. On good days they were able to direct strikes that accounted for substantial numbers of trucks.

An 18 March 1968 mission by Capts Don Shepperd and 'Lanny' Lancaster guided a Bullpup-firing F-4 into a position where it could destroy the lead vehicles of a 75-truck convoy, which was then decimated by US Navy A-7Bs. A second day of attacks further reduced the trapped truck columns in what became known as 'The Great Truck Kill'.

Another unwelcome development in early 1968 was the appearance of SA-2s in the more southerly areas of RP 1. The main threat was to *Arc Light* B-52 missions, but F-100F crews, with no effective ECM protection, felt even more vulnerable. Capts Don Shepperd and Bill Williams were the first *Misty* crew to find a live SA-2 site when they spotted four missiles on PR-11 transporters near the Mu Ghia Pass on 7 March. While they awaited the arrival of a flight of F-105Ds, they searched for the missiles' 'Fan Song' guidance radar and narrowly avoided an SA-2 that suddenly blasted off in their direction – the first to be fired at a *Misty*. The F-105s destroyed the entire site and its AAA defences, but there were many more to follow. To add to their problems, a *Misty* crew saw what was probably the first launching of an SA-7 infra-red missile in early 1968.

The end of Operation *Rolling Thunder* on 31 October 1968 released vast numbers of AAA weapons and SAMs from defending the Hanoi area, and they began to pass southwards during the bombing halt to protect the trails traffic. It also freed up several F-4 and F-105 units for use at Det 1's direction, and the F-100F crews were used increasingly to find targets for them, rather than relying on targets of opportunity found by armed reconnaissance pilots. However, these were found in Laos after 31 March, the last North Vietnamese target having been hit by Frank Kimball on 30 October when he strafed a pair of trucks near Dong Hoi. By then *Misty* missions had become the most challenging and productive of all tactical flying operations.

Operation *Commando Hunt*, beginning in 1968, was a concerted attempt to attack choke points on the trails network with all available air power. It included Operation *Search* during February 1969, in which pairs of *Misty* F-100Fs sought out areas of apparent enemy movement. Their reports were followed up quickly with RF-4C Phantom II reconnaissance flights, and their evidence was supplied to strike coordinators as rapidly as possible. More than 70 profitable targets were identified and bombed through this combined effort, which was carried over into *Stormy* F-4D and RF-4C combined missions in 1970.

SAR

Managing rescue efforts became one of *Misty's* principal responsibilities, and an early example was the recovery of a 555th TFS F-4D crew (the first D-model to be lost in combat) on 18 July 1967 in the Annamite Mountains. A *Misty* crew located the crew, who were in turn picked up by an HH-3E Jolly Green Giant in the first mission where this

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The crew chief of *Misty* F-100F-11-NA 56-3885 has set up the crew ladder and MA-2 starter truck in readiness for another long FAC sortie that would include several in-flight refuellings (*via Joe Vincent*)

F-100F-11-NA 56-3813, bearing 416th TFS codes, takes on the first of several refuellings during a *Misty* sortie from Tuy Hoa in 1970. Using the drogue refuelling system could be particularly hard, as Dick Garrett remembered. 'During a turn a hard load of M117s made the "Hun" feel like a pig in slop. Many times we had to request a "toboggan" – a gradual descent – so that we could keep up with the tanker. We had to tap the burner to hang on at times, making the old girl a bit touchy in pitch'. Rear-seat pilots had the best view of the basket for refuelling (*Terry Millard via Joe Vincent*)

type of helicopter used its in-flight refuelling capability. *Misty* crews were also involved in the attempt to save 1Lt Lance Sijan when his F-4C was brought down at Ban Loboy, Laos, probably by premature bomb detonation on 9 November 1967. Capts Jim Mack and Eben 'Jonesey' Jones picked up survival radio transmissions from the badly-injured Sijan in their F-100F '*Misty* 11' two days later, and a massive rescue operation began.

The rescuers braved intense ground fire, which claimed one A-1 *Sandy* and badly damaged two HH-3E helicopters while '*Mistys* 11' and '21' strafed the gunners. Finally, only yards away from the semi-conscious Sijan, the attempt had to be abandoned. Incredibly, the crippled aviator survived another six weeks in the jungle before being captured, briefly escaping and finally being incarcerated in Hanoi until his death in January 1968. Lance Sijan was posthumously awarded the Medal of Honor.

Capt Jones later became the first 'Hun' pilot to fly 100 missions over North Vietnam, in both single-seat and F-100F Super Sabres.

The rescue of F-105D pilot Maj Carl Light on 9 June 1968 was the first occasion on which a *Misty* crew took full charge of a SAR operation. Capt Chuck Shaheen and Maj Dick Durrant had directed two Thunderchiefs in a successful SAM site attack near Dong Hoi and then found the fighters an additional target – a heavily defended group of trucks. It was whilst attacking the latter that Maj Light fell victim to 37 mm AAA. He was extricated by a USAF SAR helicopter the following day, the rescue effort been overseen by a *Misty* F-100F.

The rescue of Maj Gary Tresemer on 14 March 1968 showed the extraordinary persistence of *Misty* and SAR crews in trying to save US airmen. His 390th TFS F-4D was hit on its fourth napalm run near Hue, and both crew-members ejected. Maj Tresemer landed on higher ground, but 1Lt James Hamm was immediately surrounded by soldiers of the North Vietnamese 304th Division. Capt Ed Risinger, on his final

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Misty mission, made repeated passes at 100ft, firing his few rounds of ammunition for 30 minutes until a helicopter arrived. It went into a hover directly above the downed pilot and immediately started taking heavy ground fire, which forced it to withdraw. A recovery often required the helicopter to hover for up to 15 minutes before the rescued airman could be hauled aboard.

Short of fuel, Capt Risinger handed over to incoming *Misty* Capt James Fiorelli, who kept enemy heads down while an Army UH-1 attempted a rescue, but was also shot down, as was an Army LOH helicopter. While another HH-3E picked up Maj Tresemer and the helicopter crews, Jim Fiorelli, joined by Capt Don Shepperd ('*Misty* 31'), kept up continuous low-level passes at the encircling Vietnamese in a weaving attack pattern with two A-1 *Sandy* RESCAP Skyraiders. Don's guns jammed on his second pass, but he continued to dive on the enemy as they closed in, engaging afterburner as he roared over their heads. Another HH-3 attempted a pick-up but was riddled with bullets as it moved in to hover over James Hamm, who was captured and shot moments before an attempted pick-up.

Despite the burgeoning AAA and SAM defences in RP 1, *Misty* did not sustain another loss until 8 November 1967 when 1Lt Guy Gruters and Capt Charlie Neel went down near Dong Hoi. They spotted an anomaly in the jungle canopy – in this case a huge camouflaged fuel dump – went to the tanker and returned with a flight of 366th TFW F-4s. As Neel pulled out from his target-marking pass, the F-100F took a solid hit in the lower fuselage and began to burn.

Another view of F-100F-21-NA 58-1222, this time at Udorn RTAFB in 614th TFS markings and changed tail codes. Based at Phu Cat in 1968, it used 'HS' codes for *Commando Sabre* missions (*Don Larsen via Norman Taylor*)

***Misty* F-100Fs flew with two 335-gal tanks, a pair of 'Willie Pete' rocket pods and ammunition for their two 20 mm guns. This 416th TFS example (56-3882) has its air-brake extended and canopy open on a hot day at Phu Cat AB. After extensive service, initially with the 20th TFW in the UK, and many hazardous *Misty* FAC missions with the 612th TFS Det 1, the aircraft finally met its end as a target drone in November 1990 (*USAF*)**

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He followed 'Bud' Day's trick of trying to gain enough altitude to reach the coast, but like Day's aircraft, Neel's 56-3764 lost its hydraulic fluid and became uncontrollable. The crew bailed out as the jet crossed the shoreline and became targets for Vietnamese gunners as they floated in their ML-4 life rafts. Neel called in the F-4s, who strafed the NVA positions, as well as five sampans that set out to 'rescue' the *Misty* crew. F-4 pilot Jerry Nabors disposed of one boat with two 19-round pods of 5-in. rockets, fired straight over Neel's head.

Gruters was subsequently shot down again with tactics guru Maj Bob Craner on a 20 December mission in appalling weather. Letting down through a rare hole in the cloud, they saw dozens of vehicles taking advantage of both the cloud cover and the Americans' inability to attack in such restricted visibility. Gruters could not resist the temptation to strafe a few, and they then headed north to check out an AAA emplacement near Dong Hoi. As they overflew the site the entire 57 mm battery opened up on them and they were forced to eject from F-100F 56-4005, landing in the Ron Valley. Both men were captured and taken to Hanoi, despite strenuous rescue attempts. There, they fought to keep cell-mate Lance Sijan alive until torture and pneumonia killed him.

Capts Brian and Howard Williams (unrelated) were the next *Misty* loss during an 18 March 1968 mission on which they saw some earth-moving equipment near the Ban Karai Pass and were hit as they turned back for a closer look. Their 355th TFS F-100F (56-3784) was quickly engulfed in flames and they prepared to eject. Brian Williams' parachute lost some panels but he landed safely in a tree and was picked up by helicopter less than two hours later thanks to a well-coordinated search by fellow *Misty* pilots Capts Don Shepperd and 'Lanny' Lancaster. Howard Williams' fate was not established until 1992, when remains found near the crash site were identified.

The solo nature of most *Misty* operations, with IFF switched off and virtual radio silence, meant that losses were sometimes mysterious. Lt Col Larry Whitford, the *Misty* CO, and 1Lt Patrick Carroll were flying a 'trails' mission near Dak To, in Laos, on 1 November 1969 when they called for refuelling from a KC-135A. Their aircraft (56-3796) then vanished without trace. Capt Larry Nophsker and Maj Jim Cruson searched for them on the next *Misty* mission, thought they saw a crash site but were unable to detect any signs of survivors. Short of fuel themselves, they had to divert to Chu Lai AB halfway through the search, and as the base lacked F-100 facilities, they had to re-pack their own drag chute.

Maj John Overlock was making his final *Misty* flight on 16 August 1968 with the former 37th TFW safety officer, Maj Mike McElhanon, as '*Misty 11*'. They reported that they were heading out over the sea for a second refuelling during their long morning mission. The incoming relief *Misty*, flown by Capts Chuck Shaheen and Dick Rutan, expected to contact '*Misty* 11' to receive information on their observations over the North. They heard nothing, neither did the tanker crew nor did the *Hillsborough* airborne controller, and the loss remains a mystery.

Ironically, Chuck Shaheen and Dick Rutan also made their final *Misty* flights the following day with a flight of bomb-laden Phu Cat F-100Ds. When the latter failed to hit a truck target that Shaheen had found, he decided to strafe 'on the deck'. His guns shredded the vehicle, but as

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he pulled up to avoid a cliff face he felt a solid hit in the aircraft's belly and fire immediately billowed from the fuselage as leaking fuel torched in the afterburner flames. The crippled F-100 took them about ten miles out to sea before the fuel gave out and they ejected safely. It was Dick Rutan's 105th, and final, *Misty* flight out of a total 325 combat missions.

Capt Lee Gourley and 1Lt 'Scottie' Dotson vanished in unknown circumstances on 9 August 1969 over Laos. They reported a hit and announced imminent ejection, but no further contact was ever made. Their loss took *Misty* casualties to eight aircraft in a 12-month period, which in turn prompted Gen Momyer's replacement, Gen George Brown, to limit sortie length to four hours in the hope that this would curb the mounting loss rate. Missions had regularly lasted more than five hours, and occasionally up to eight hours.

Gen Brown also commenced the transition of the 'Fast FAC' role to the F-4D, setting up a unit at Da Nang where Phu Cat *Misty* crews trained the Phantom II flyers as *Stormy* FACs. The 8th TFW had already begun to fly *Wolf* missions of this kind from Ubon RTAFB, using rockets and SUU-42/A flare pods to mark targets for strikes in Laos. A *Tiger* FAC F-4E operation was also established at Korat RTAFB, but the Phantom II's wide turning circle, heavy fuel consumption, highly visible smoke trails and poor visibility from the rear cockpit were only partially compensated by better acceleration and ordnance-carrying capability.

'Night *Misty*' operations were introduced to improve results in the 'trails war'. One of the usual 'Willie Pete' rocket pods was replaced by a pod of US Navy 'log' parachute flares, which burned for 45 minutes and successfully illuminated south-bound convoys, but accompanying F-4 bombers were often unable to follow up with accurate attacks. Cockpit lights were taped over to reduce glare, and back-seaters were briefly provided with clumsy 18-inch long 'Starlight scope' night vision devices.

'Super FAC' 'Huns' remained at Phu Cat, where full Super Sabre facilities were available, rather than moving further north to Da Nang, closer to their operational area. However, the base became home to 12th TFW F-4Ds in March 1970 and the 37th TFW was inactivated. Its 612th TFS *Misty* Det 1 returned to Tuy Hoa in June 1969. By the time attrition made the F-100F's combat phase-out inevitable in mid-1970, *Misty* crews had completed 21,000 combat hours. Operations continued on a reduced scale in Laos, but on 12 May 1970 Seventh Air Force decided that the unit should be inactivated – a process that was completed for the 612th TFS by 31 July 1971 when F-100 activity ended at Tuy Hoa AB.

The 155 pilots who served with the *Misty* Det had suffered the heaviest losses of any F-100 unit. Thirty-four were shot down, two of them twice – a 22 per cent loss rate. Seven were killed and three were taken prisoner. *Misty* included some notable pilots. Two, Maj Merrill A McPeak and Capt Ronald Fogleman ,were eventually promoted to Chief of Staff, USAF. In 1986 Capt Dick Rutan became the first man to fly around the world non-stop without refuelling. Capt Don Shepperd retired as Head of the ANG and 1Lt Charles Veach and Capt Roy Bridges became astronauts. The small *Misty* detachment's contribution to the war effort was disproportionally great, and it pioneered tactics that remained in use during the Gulf War and Operation *Allied Force* in Kosovo in 1999.

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'HS' codes were allocated to the 612th TFS Det 1, although aircraft from other squadrons were often used for *Misty* missions. F-100F-11-NA 56-3783 is seen visiting the 8th TFW at Ubon RTAFB – one of the F-4 wings with which the *Misty* crews operated. 'Willie Pete' pods are hung on its outer pylons (*David Menard Collection*)

***Misty* FAC missions usually required at least two in-flight refuelling hook-ups with a KC-135A adapted for drogue-type fuel transfers. On occasion a refuelling probe tip could break off in the basket or rip the basket from its hose. Entire probes could be bent at a crazy angle by turbulence during a refuelling. This *Misty* is outward bound with full marker rocket pods (*via Ben Brown*)**

Jim Icenhour offered a postscript on the F-100's combat years in Vietnam. He spent much of his life with the 'Hun', as his father graduated from the F-86 and flew Super Sabres at Kadena AB from 1956 to 1968 – the year that Jim began his acquaintance with the jet. He flew it until 1972, including a Tuy Hoa combat tour, with a final flight to deliver an F-100F from RAF Lakenheath to the Turkish air force;

'The "Hun" was underpowered, or overloaded – take your pick! The maximum gross take-off weight was 41,500 lbs, and our usual load of four M117 bombs or four cans of napalm put us right around 40,000 lbs at takeoff. The old J57 put out about 16,000 lbs of thrust in afterburner. On a hot day at Tuy Hoa it would take almost 7000 ft of an 8000-ft runway to get airborne. We could only climb to about 16,500 ft until the drop tanks went dry, and then we could creep up to 18,500 ft. Throttle response was quite slow – about 20 seconds from idle to military thrust. Move the throttle too quickly and you'd get a compressor stall.

'Once you got the nose pointed down it would accelerate nicely, and it was a very stable and very accurate dive-bomber – much better than the F-4 or F-111. Accuracy of less than 50 ft for a 30-degree dive bomb was routine. The kick of firing four 20 mm cannon was great. Rate of fire was 1500 rounds per minute per gun, or 6000 rounds per minute combined – the same as the M61 Gatling gun. The jet handled nicely under g, being most definitely a "rudder" aeroplane. While airborne, the afterburner worked best with the aircraft at relatively high speeds and low g loads. Trying to light it at low airspeed and/or high g usually got you an eye-watering compressor stall with fire out of both ends. The first time it happened to me it blew my feet off the rudder pedals and I thought the jet had blown up. But all in all it was a great aeroplane to fly my combat tour in.'

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APPENDICES

F-100 SUPER SABRE DEPLOYMENTS TO SOUTHEAST ASIA 1961-72

90th TFS 'Pair o'Dice' (blue fin flash) – To 3rd TFW at Bien Hoa AB 8 February 1966 to 31 October 1970.
120th TFS 'Bobcats' (blue fin flash)/140th TFG Colorado Air National Guard – To Phan Rang AB 3 May 1968 to 30 April 1969.
136th TFS 'Rocky's Raiders' (yellow fin flash)/107th TFG New York Air National Guard – To 31st TFW at Tuy Hoa AB 14 June 1968 to 25 May 1969.
174th TFS (yellow fin flash)/185th TFG Iowa Air National Guard – To 37th TFW at Phu Cat AB May 1968 to May 1969.
188th TFS 'Enchilada Air Force' (yellow fin flash)/150th TFG New Mexico Air National Guard – To Tuy Hoa AB with 31st TFW late May 1968 to 5 June 1969.
306th TFS 'Rapid Rabbits' (red fin flash) – To 31st TFW at Tuy Hoa AB 25 December 1966 to 28 September 1970.
307th TFS (red fin flash) – TDY to Bien Hoa AB July to November 1965, when aircraft transferred to 531st TFS.
308th TFS 'Emerald Knights' (green fin flash) – To Bien Hoa AB December 1965 to 14 November 1966 then to 31st TFW at Tuy Hoa AB 15 November 1966 to 15 October 1970
309th TFS 'Dusty Ducks' (yellow fin flash) – To 31st TFW at Tuy Hoa AB December 1966 to 5 October 1970.
352nd TFS 'Yellow Jackets' (yellow fin flash) – To 366th TFW at Phan Rang AB 15 August to 10 October 1966 then to 35th TFW (Phan Rang AB) 10 October 1966 to 31 July 1971.
355th TFS 'Fightin' Falcons' (blue fin flash) – From 354th TFW to 37th TFW at Phu Cat AB 3 February 1968 to 15 May 1969 then to 31st TFW at Tuy Hoa AB 15 May 1969 to 30 September 1970.
416th TFS 'Silver Knights' (blue fin flash) – From 21st TFW to 3rd TFW June 1964, TDY to Da Nang AB late March 1965 to mid-June 1965, TDY to Bien Hoa AB mid-June to mid-July 1965, PCS to Tan Son Nhut AB 1 November 1965 to early June 1966, to Bien Hoa AB early June 1966 to April 1967, to 37th TFW at Phu Cat AB 15 April 1967 to 29 May 1969 then to Tuy Hoa AB 28 May 1969 to 28 Sept 1970 (unit was non-operational from 5 September).
428th FBS/TFS 'Buccaneers' (blue fin flash) – TDY from 474th TFW to Takhli RTAFB 18 May to 3 September 1962 and August 1964 to March 1965, then TDY to Da Nang AB mid-November 1964 to late December 1964 (using 522nd TFS assets) with detachments to Takhli.
429th TFS 'Black Falcons' (yellow fin flash) – TDY from 474th TFW to Bien Hoa AB 13 July to early December 1965.
430th TFS 'Tigers' (red fin flash) – TDY to Takhli RTAFB 3 September to 13 December 1962.
478th TFS 'Grey Foxes' (green fin flash) – TDY from 474th TFW to Takhli RTAFB 1962.
481st TFS 'Crusaders' (green fin flash) – TDY from 27th TFW to Tan Son Nhut AB 29 June 1965 to 1 January 1966.
510th TFS 'Buzzards' (purple fin flash) – TDY by six aircraft to Don Muang International Airport, Bangkok, 16 April 1961 to late 1961, then to 3rd TFW at Bien Hoa AB 8 November 1965 to 15 March 1971.
522nd TFS 'Fireballs' (red fin flash) – TDY from 27th TFW to Takhli RTAFB and Da Nang AB 13 December 1962 to 1 June 1963 and 16 March to 6 May 1964, then TDY to Bien Hoa AB mid-August to November 1965.
524th TFS 'Hounds of Heaven' (yellow fin flash) – TDY from 27th TFW to Takhli RTAFB late 1963 to early 1964.
531st TFS 'Ramrods' (red fin flash) – TDY to Da Nang AB February to July 1965, then to 3rd TFW at Bien Hoa AB mid-December 1965 to 31 July 1970 (inactivated).
612th TFS 'Screaming Eagles' (blue fin flash) – TDY to Da Nang AB early September to mid November 1964, then activated as Det 1 612th TFS/ 366th TFW at Phan Rang AB 15 May 1966, moving to 35th TFW at Phu Cat AB 8 June 1967 to 13 April 1969 and to Tuy Hoa AB 14 April 1969 to 31 July 1971.
613th TFS 'Squids' (yellow fin flash) – PCS from 401st TFW to Da Nang AB November 1964 to July 1965.
614th TFS 'Lucky Devils' (red fin flash) – TDY from 401st TFW to Clark AB, Philippines, and Da Nang AB August to November 1964, then to 35th TFW at Phan Rang AB 18 September 1966 to 31 July 1971.
615th TFS 'Panthers' (green fin flash) – TDY from 401st TFW to Da Nang AB June to September 1964 and early April to June 1965, then to 35th TFW at Phan Rang AB 16 July 1966 to 31 July 1971.
6234th TFW *Wild Weasel* Detachment – At Korat RTAFB 26 November 1965 to July 1966.

COLOUR PLATES

1

F-100D-90-NA 56-3264 of the 510th TFS/405th FW, Don Muang Airport, Thailand, April 1961

The 510th TFS 'Buzzards' made one of the first deployments to Thailand, flying into Bangkok's Don Muang Airport on 16 April 1961. This detachment of 'Buzzards'' F-100Ds, deployed as part of Operation *Bell Tone*, was to provide air defence for the Thai capital after the loss of a USAF SC-47 intelligence aircraft to Pathet Lao gunfire. These temporary deployments gradually increased in size as 'flag waving' exercises turned into open conflict. This aircraft was first delivered to the 18th TFW at Kadena AB in October 1958 and was passed on to the 510th TFS/405th FW in December 1961. The jet was still serving with this unit when, on 22 August 1967, Capt H D Canterbury ejected from it after the 'Hun' suffered a AAA hit while attacking a VC battalion near Rach Gia. The squadron's unique purple decor later appeared on the tails of its camouflaged Super Sabres.

2

F-100D-21-NA 55-3502 of the 429th TFS/474th TFW, Tan Son Nhut AB, Republic of Vietnam, December 1965

This aircraft is seen here armed with SUU-7A 19-tube CBU dispensers. The colourful squadron

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markings worn by USAF fighters in the 1950s were gradually toned down through the mid-1960s, particularly in Southeast Asia. For example, mid-fuselage 'Buzz' numbers were over-painted in 1965. The 429th TFS from Cannon AFB made a temporary deployment to Tan Son Nhut AB between July and November 1965. This aircraft passed to the 531st TFS/3rd TFW at Bien Hoa AB after previous service with the 354th and 31st TFWs and 4520th CCTW in 1958, followed by the 510th TFS in 1959. 55-3502 operated from Bien Hoa until 30 September 1966, when Lt Col W M Fowler was shot down on a third attack pass against VC troops on the outskirts of Saigon. He was rescued by a USAF HH-43.

3

F-100F-11-NA 56-3868 of the 522nd TFS/27th TFW, Clark AB, the Philippines, November 1965

This aircraft previously represented the 4th FDW in the 9th Air Force Firepower Team in 1959. The 27th TFW detached its 481st TFS from Clark to Da Nang, cycling crews and aircraft from its other units through South Vietnam too. 56-3868 first flew with the 4th TFW, followed by the 37th, 35th, 474th and 31st TFWs. Assigned 'CD' codes upon its return to the USA, the 27th TFW performed the last regular USAF F-100 sortie on 19 July, 1972. This F-100F then flew with the Connecticut, Georgia and Missouri ANG units before withdrawal to the Military Aircraft Storage and Disposition Center (MASDC) at Davis-Monthan AFB, Arizona, on 3 January 1979 and eventual conversion into a QF-100F target drone.

4

F-100D-71-NA 56-3063 *The Shadow* of the 481st TFS/27th TFW, Tan Son Nhut AB, Republic of Vietnam, July 1965

Traces of its previous 'FW-063' buzz number show through the silver over-painting on the fuselage of this aircraft. The squadron commander, Lt Col Comstock, designed the green tail marking for the 481st TFS's TDY assignment. *The Shadow* nose art (based on a *MAD* magazine cartoon) was applied by 1Lt Jim Kempton at the request of '063's assigned pilot, Capt Stephen Dvorchak. The aircraft carries M117 750-lb bombs. This F-100D subsequently moved to the 510th TFS/3rd TFW and crashed with its pilot, Capt Michael Hyde, still aboard during a napalm pass on 8 December 1966. It had previously flown with the 312th TFW in 1957-58, the 27th TFW between March 1959 and July 1962 and the 474th TFW from April to November 1963.

5

F-100F-16-NA 56-3954 of the 612th TFS/366th TFW, Da Nang AB, Republic of Vietnam, November 1964

Seen here in 1964 with basic TAC markings, this was the aircraft in which Maj George Day and Capt Corwin Kippenham flew their ill-fated *Misty* FAC sortie on 26 August 1967. The two-seat fighter was initially delivered to the 366th TFW in April 1958 and made its first Southeast Asian visit to Misawa AB with the 39th AD in November 1965. Transferred to South Vietnam, 56-3954 flew with the 35th TFW at Phan Rang AB prior to joining the 37th TFW. The Super Sabre has been depicted here carrying the standard 2.75-in 'Willie Pete' rocket pods that were the *Misty* FAC crews' main weapon.

6

F-100D-86-NH 56-3405 *Tonya* of the 307th TFS/ 31st TFW, Bien Hoa AB, Republic of Vietnam, summer 1965

With 185 combat missions already marked up, and bombs aboard for the next mission, this F-100D typifies the extraordinary durability of both the 'Hun' and its crews. Panels surrounding the gun ports were often painted black to lend a little smartness, but the well-used guns on this aircraft have spread their smoke-stains more widely. This F-100D first served with the 506th TFW from 26 September 1957, moving to George AFB and the 31st TFW in May 1958. Its Vietnam period began at Bien Hoa in September 1965, after which 56-3405 served with the 35th TFW at Phan Rang from July 1970 until May 1971. It entered MASDC on 13 June 1978 after service with the Ohio ANG for conversion to QF-100D drone status. 56-3405 was destroyed on 16 March 1988.

7

F-100F-20-NA 58-1226 of the 6234th TFW *Wild Weasel* Detachment, Korat RTAFB, Thailand, December 1965

This aircraft was used by Capts Allen Lamb and Jack Donovan to make the first confirmed SAM site kill on 22 December 1965. One of the first four *Wild Weasel* conversions, this F-100F had a reputation for maintenance 'write-ups', but it survived many *Iron Hand* missions and returned to combat with the 614th TFS/35th TFW in February 1968 as a *Misty* FAC aircraft. Flown by Col Preston Hardy (the 35th TFW vice-commander) and Capt Dave Jenny on a 5 July 1968 FAC mission, 58-1226 developed severe engine oil supply problems after about five hours and had to be abandoned over the Gulf of Tonkin. It had begun its USAF service in June 1959 with the 21st TFW at Misawa AB, moving to the 405th FW at Clark AB in August 1964.

8

F-100D-71-NA 56-3163 *Day Tripper* of the 308th TFS/31st TFW Tuy Hoa AB, Republic of Vietnam, 1966

The aircraft's nickname appeared only on its front nose-gear door, like many others at a time when overt nose-art was usually forbidden and had to be applied to inconspicuous locations such as air intake interiors. *Day Tripper* carries four finned BLU-27 fire bombs. This aircraft was downed by small-arms fire soon after take-off from Tuy Hoa AB on 26 May 1970, Capt W D Croom of the 309th TFS being rescued. 56-3163 commenced USAF service on 13 August 1957 with the 506th FBW, and it also flew with the 312th and 27th TFWs at Cannon AFB and served for four years with the 4520th CCTW.

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9

F-100D-41-NH 55-3777 of the 90th TFS/3rd TFW, Bien Hoa AB, Republic of Vietnam, 1969

This aircraft has four 500-lb Mk 82 low-drag general purpose bombs aboard for a CAS sortie. It also has antennae for the AN/APR-25/26 ECM systems on its nose and tail-fin fairing. A Columbus-built jet, it entered service with the 312th TFW on 22 January 1957, passing through the 31st, 366th and (after its Bien Hoa period) the 35th TFWs at Phan Rang until it crashed after engine oil system failure on 13 January 1970.

10

F-100D-86-NH 56-3440 of the 531st TFS/3rd TFW at Bien Hoa AB, Republic of Vietnam, 1969

Delivered to the 506th FBW in December 1957, this aircraft was passed on to the 413th FDW at George AFB four months later. When this wing was re-designated the 31st TFW in 1959, the 'Hun' wore the colourful markings of the 308th TFS/31st TFW. These were replaced by a unique all-white scheme for high-altitude tests conducted from Aviano AB in 1960 by Maj Robinson Risner, later an important figure in the F-105 community. By late 1965 the fighter was at Bien Hoa AB with the 307th TFS, having served with the 8th TFW at Itazuke, Japan, during transition to the F-105. Moving on to the 308th TFS in 1966, 56-3440 was transferred to the 531st TFS in 1968, where it was flown by 1Lt Bill Brown. Subsequently assigned to the 90th TFS (and adopting its 'CB' tail code), the 'Hun' was used by 1Lt Bob Dunham to fly his 100th combat mission. It then moved to the 524th TFS/27th TFW ('CD' codes) at Cannon AFB, this unit flying the final regular USAF F-100 mission on 19 July 1972. A final tour with the Michigan ANG's 107th TFS at Selfridge Air National Guard base preceded 56-3440's permanent display at the Smithsonian Air and Space Museum.

11

F-100D-51-NH 55-2881 of the 531st TFS/3rd TFW, Bien Hoa AB, Republic of Vietnam, 1970

Armed with Mk 82 Snakeye bombs for a CAS sortie, 55-2881 is depicted here as it looked towards the end of the 'Five Thirsty First' squadron's lengthy tour of almost five years at Bien Hoa. During that time the unit had lost no fewer than 17 F-100s to combat and other causes in a non-stop cycle of missions, although 11 pilots had been rescued. This jet was passed on to the 614th TFS ('VP' codes) at Phan Rang AB in 1970, after which it served with the Massachusetts ANG's 131st TFS from mid-1971. The veteran fighter finally entered storage at MASDC on 18 April 1979.

12

F-100D-86-NH 56-3439 of the 306th TFS/31st TFW Tuy Hoa AB, Republic of Vietnam, 1969

This aircraft's time with the 31st TFW dated back to 1959 when it visited Incirlik AB, Turkey, for Exercise *Quick Span*. In its first 32 months in Vietnam the 3rd TFW flew an astonishing 100,000 combat sorties. The 306th stayed another year before re-assignment to a base in the USA in October 1970. Post-war, 56-3439 joined the Missouri ANG at Lambert Field, St Louis, and eventually entered MASDC on 20 October 1978 as FE0410. In 1988 the jet was converted into a QF-100D drone.

13

F-100D-21-NA 55-3550 of the 308th TFS/31st TFW, Phan Rang AB, Republic of Vietnam, September 1970

55-3550 commenced its frontline service with the 8th TFW at Itazuke AB in January 1957, after which it spent time with the 21st TFW before moving to the 27th TFW in January 1964 via the 405th FW. Joining the 31st TFW in January 1968, the 'Hun' was transferred to the 615th TFS/35th TFW at Phan Rang AB in August 1970. 55-3550 had the unenviable distinction of being the last F-100 loss of the Vietnam War when it was hit by ground fire near Ap Vinh Hoa on the coast, some 20 miles from its home runway, whilst returning from a night mission on 28 April 1971. Its pilot, 1Lt B G Lang, failed to eject from the F-100 and was killed.

14

F-100D-71-NA 56-3048 *MILLIE'S MOOSE* of the 309th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1969

This aircraft also bore the nickname *Barbara* on the right side of the nose. Some frequent repainting and weathering of the tail area, as markings specifications changed, has left traces of the original black 'USAF 63048' and white '3048' showing through beneath the later codes 'SS 048' and black 'AF 63'. This F-100D had originally belonged to the 31st TFW in 1957, and it then passed through the 474th TFW and 4520th CCTW, before rejoining the 31st TFW in September 1968. Post-war, 56-3048 served with three ANG squadrons from June 1971, before it was flown to MASDC in June 1979 and later converted into a QF-100D in 1982.

15

F-100D-91-NA 56-3233 *PEG O' MY HEART* of the 306th TFS/31st TFW at Tuy Hoa AB, Republic of Vietnam, 1969

This aircraft was another F-100D from a time when nose art was tacitly allowed at the base. 'Daisy cutter' fuses at the end of metal pipes were fitted to explode bombs above ground. Such ordnance was required to blast trees over when preparing a helicopter landing zone in the jungle. This 'Hun' spent its first eight years in USAFE with the 50th TFW at Toul-Rosieres, France, and Hahn, West Germany, prior to joining the 31st TFW in August 1966. 56-3233 then flew with the Ohio and Missouri ANGs before conversion into a full-scale aerial target (FSAT) and subsequent destruction in March 1987.

16

F-100F-11-NA 56-3813 *SOUL SISTER* of the 306th TFS/31st TFW at Tuy Hoa AB, Republic of Vietnam, 1969

This was one of the first F-100s to visit Thailand,

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Maj Roy Moore using it to provide check-rides for Royal Thai Air Force officers when his 72nd TFS detachment visited Don Muang Airport from Clark AB during a Far East deployment that began in July 1958. He took the shortest route to Bangkok from the Philippines – directly across North Vietnam! The aircraft remained with the unit when it became the 510th TFS in April 1959, after which it served with USAFE's 50th TFW at Hahn AB from August 1960 to September 1966, before moving to the 4520th CCTW until June 1968. 56-3813 was then briefly with the 27th TFW, before returning to Southeast Asia and serving with the 37th, 31st and 37th TFWs through to July 1971. Time with the ANG's 101st and 131st TFSs followed prior to its temporary retirement to MASDC on 23 September 1979. The jet was returned briefly to service until 26 February 1991, when it was placed in storage at Davis-Monthan AFB once again and scheduled for QF-100F conversion. The latter was cancelled, however, and the aircraft was instead put on display at VFW Post 1186 in Independence, Kansas.

17

F-100C-2-NA 53-1737 of the 188th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1969

One of the most venerable 'Huns' to serve in Vietnam, this example came from the first F-100C production block and began service with the squadron in 1964. Previously, it had operated with the 322nd FDG at Foster AFB, Texas, from August 1955 and the 450th FDW, as well as the 4520th CCTW. These aircraft proved to be some of the most reliable and well-maintained in the F-100 force, flown by highly experienced 'Hun' pilots who generally had at least 1000 hrs on the type. This example was eventually consigned to MASDC on 26 June 1974 as FE0267 after almost 20 years of service.

18

F-100D-86-NH 56-3459 *Iron Butterfly* of the 355th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1970

This 'Hun's' career began with the 31st FBW/TFW at Turner AFB in 1958. The wing's aircraft were transferred to the 354th TFW in 1960, and 56-3459 remained with this unit until October 1966, at which point it moved to Bien Hoa with the 3rd TFW. It then returned to 31st TFW control in June 1969 until that wing's aircraft were passed on to ANG units in 1971. After a brief period with the Ohio ANG's 166th TFS, the aircraft was written off after an accident on 12 July 1972.

19

F-100D-31-NA 55-3749 *BLOOD, SWEAT 'N' TIRES* of the 355th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1969

The nickname applied to this jet was a sardonic comment on one of the groundcrews' least favourite jobs. Changing tyres on the F-100 required removal of the complex anti-skid and braking systems, which could take less experienced 'fixers' two or more hours. This 'Hun' was introduced to the USAF via the 312th TFW in January 1957, and two years later it represented the 4520th CCTW at the Nellis AFB 1959 Gunnery Meet. 55-3749 began its Vietnam duties at Phu Cat AB in February 1968, moving to Tuy Hoa and the 31st TFW in December of that year. The Super Sabre's final assignment was at Phan Rang from 7 September 1970 until it was shot down on a 614th TFS mission over Cambodia on 13 April 1971, its unnamed pilot being successfully rescued.

20

F-100D-86-NH 56-3456 *DARLENE'S DEAR* of the 355th TFS/31st TFW, Tuy Hoa AB, Republic of Vietnam, 1970

Introduced to USAF service by the 506th FBW in January 1958, this F-100D moved to the 27th TFW at Cannon AFB in 1959 and then flew with the 3rd TFW at Bien Hoa AB from July 1966 to January 1969. At Tuy Hoa with the 308th TFS and 355th TFS from then until September 1970, the F-100 performed its final USAF duties with the Ohio ANG's 162nd TFS before being transferred to the Turkish air force in 1972.

21

F-100D-26-NA 55-3658 *LETHIFEROUS LOLA* of the 615th TFS/35th TFW Phan Rang AB, Republic of Vietnam, 1971

After initial service with the 388 FBW at Etain-Rouvres AB, France, this aircraft was with the 474th TFW at Cannon AFB until January 1963, after which it was used for training at Nellis AFB. The fighter's Vietnam duties began at Phan Rang AB in December 1966, where it served with the 35th TFW for almost five years. The 615th TFS had flown its last mission on 31 July 1971, using bombs and newer weapons such as the flat-bottomed 'gravel'-type CBU dispensers carried by *LOLA*. That same month 55-3658 assumed a new role with the Massachusetts ANG's 131st TFS, but it was written off in an accident at the unit's Barnes Field base on 4 October 1974 when the fighter's brake chute failed and it overran the runway onto a road and hit a car.

22

F-100D-71-NA 56-3053 *BETTIE BOOP* of the 615th TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1971

Also nicknamed *Strawberry* in 615th TFS service, this F-100D's career began with the 312th TFW in May 1957 and progressed through the 401st and 354th TFWs and 4520th CCTW. At Phan Rang from 20 June 1968, the F-100 flew with the 35th TFW until 19 September 1970. Service with the Ohio ANG's 162nd TFS was followed by withdrawal to MASDC in April 1978 and final duties as a QF-100D FSAT.

23

F-100F-21-NA 58-1232 of the 352nd TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1970

This was one of the 510th TFS Super Sabres that served at Clark AB from 15 August 1959 to 8 November 1962, making early visits to Thailand during this time. 58-1232 then passed through the

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405th FW, 3rd TFW and then the 27th TFW (from 1964 to May 1968), before transferring to the 35th TFW at Phan Rang from September 1968 until April 1969. It performed more war service at Phan Rang with the Colorado ANG's 120th TFS, whose mountain lion marking is seen here on the fin, albeit with 352nd TFS 'VM' codes rather than the squadron's official 'VS'. The Super Sabre was passed on to the South Dakota ANG's 175th TFS in 1971, before eventually being retired to Brooks AFB, Texas, and inexplicably put on display as F-100F 56-3994.

24

F-100C-26-NA 54-2066 of the 120th TFS/35th TFW, Phan Rang AB, Republic of Vietnam, 1968

This F-100C began its operational career at George AFB with the 413th FDG in March 1956, after which it flew with the 479th TFW from April 1957 to February 1958. Then used as a trainer at Nellis AFB until May 1963, 54-2066's time with the 120th TFS ended in September 1969. The jet had seen combat with the squadron from Phan Rang between April 1968 and March 1969. Refurbished in 1973 following four years in MASDC, the Super Sabre was supplied to the Turkish air force in January 1973.

25

F-100D-71-NA 56-3025 of the 614th TFS/35th TFW Phan Rang AB, Republic of Vietnam, 1970

Another F-100D made available through the 50th TFW's conversion to the F-4C/D Phantom II in October 1966, this aircraft had flown from Hahn AB with the USAFE unit since April 1964. It operated out of Phan Rang from August 1968 to July 1971, when F-100 operations closed down at the base. 56-3025 was then passed on to the Massachusetts ANG's 131st TFS at Barnes Field until 1976. Following retirement, 56-3025 was put on display at the Selfridge Military Air Museum in Michigan in 1984.

26

F-100D-26-NA 55-3620 *FULL HOUSE* of the 416th TFS/37th TFW, Phu Cat AB, Republic of Vietnam, 1966

With evidence of combat damage repair and an 'owl and moon' zap that may have been a present from the 8th TFW at Ubon RTAFB, *FULL HOUSE* is seen here ready for yet another mission. Its USAF service began at Misawa in January 1959 with the 531st TFS/21st TFW. By December 1966 it was with the 416th TFS at Phu Cat, following a period flying with the 3rd TFW. Transferred to Tuy Hoa AB and the 31st TFW in December 1968, the fighter remained here until 22 September 1970, when it was reassigned to the Missouri ANG's 110th TFS. Sent to MASDC on 1 December 1978, 55-3620 was eventually destroyed on 14 April 1986 following its conversion into a QF-100D.

27

F-100D-56-NH 55-2925 of Det 1 612th TFS/37th TFW, Phu Cat AB, Republic of Vietnam, 1968

This much-travelled F-100D flew with all four PCS Vietnam F-100 wings, but first served with the 401st TFW at England AFB, Louisiana, from July 1957. It was at Bien Hoa with the 3rd TFW from November 1965, the 35th TFW at Phan Rang from June 1966 and the 37th TFW at Phu Cat from 31 October 1967 to 15 October 1968. 55-2925's final combat period was with the 31st TFW at Tuy Hoa until September 1970, after which it moved to the 118th TFS 'Flying Yankees' of the Connecticut ANG and then to MASDC as FE0601 in September 1979 and QF-100D conversion.

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Front cover

Although the F-100's war consisted primarily of air-to-ground missions, for a brief period in 1964-65 it served as the USAF's primary escort and MiGCAP fighter over North Vietnam until the F-4 Phantom II became available. On 4 April 1965, during the second *Rolling Thunder* attack on the crucial Than Hoa bridge, 75 miles from Hanoi, F-100Ds of the 416th Tactical Fighter Squadron (TFS) were tasked with performing combat air patrols as cover for any rescue attempt for downed aircrew (ResCAP). Their job was to defeat any MiG-17s that tried to intercept a 48-strong strike force of F-105D Thunderchiefs.

Capt Don Kilgus was flying the No 2 jet in 'Green' flight, his F-100 armed with rocket pods and 20 mm guns for ResCAP. His flight was orbiting offshore when two MiG-17s from the Vietnamese People's Air Force (VPAF) approached them and turned in behind the Americans to commence an attack.

Capt Kilgus was able to establish a steep, diving pursuit of one of the MiGs from 20,000 ft. He fired several bursts of 20 mm cannon fire at the North Vietnamese fighter and saw a flash on its right tailplane and debris falling away. At around 7000 ft the MiG vanished into the smoky haze over the Gulf of Tonkin and Kilgus had to concentrate on pulling his aircraft (55-2894 *Kay Lynne*) out of a near-vertical dive just above the sea. The other members of 'Green' flight were convinced that the MiG must have gone down, and the VPAF later admitted the loss of three MiG-17s from the 921st Fighter Regiment on this day. Two may have fallen victim to their own antiaircraft fire near the Than Hoa target, but the surviving pilot from the MiG flight, Tran Hanh, stated that USAF F-100 and F-105 fighters had been responsible for all three losses.

Kilgus was awarded a 'probable' kill and the matter was closed because President Lyndon Johnson disapproved of MiGs being shot down at this early stage of the war (*Cover Artwork by Gareth Hector*)

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